

# Sequence Listing

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 Gerritsen, Mary E.  
 Goddard, Audrey  
 Godowski, Paul J.  
 Grimaldi, J. Christopher  
 Gurney, Austin L.  
 Hillan, Kenneth J  
 Kljavin, Ivar J.  
 Kuo, Sophia S.  
 Napier, Mary A.  
 Pan, James;  
 Paoni, Nicholas F.  
 Roy, Margaret Ann  
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 Wood, William I.

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 Glu Gln Ala Leu Asn Arg Gly Ile Ala Ala Val Lys Glu Asp Ala  
 35 40 45  
 Val Glu Met Leu Ala Ser Tyr Gly Leu Ala Tyr Ser Leu Met Lys

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| 50  |     |     |     |     |     |     |     |     |     | 55  |     |     |     |     | 60 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Phe | Phe | Thr | Gly | Pro | Met | Ser | Asp | Phe | Lys | Asn | Val | Gly | Leu | Val |    |  |  |  |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |    |  |  |  |  |
| Phe | Val | Asn | Ser | Lys | Arg | Asp | Arg | Thr | Lys | Ala | Val | Leu | Cys | Met |    |  |  |  |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |    |  |  |  |  |
| Val | Val | Ala | Gly | Ala | Ile | Ala | Ala | Val | Phe | His | Thr | Leu | Ile | Ala |    |  |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |    |  |  |  |  |
| Tyr | Ser | Asp | Leu | Gly | Tyr | Tyr | Ile | Ile | Asn | Lys | Leu | His | His | Val |    |  |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |    |  |  |  |  |
| Asp | Glu | Ser | Val | Gly | Ser | Lys | Thr | Arg | Arg | Ala | Phe | Leu | Tyr | Leu |    |  |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |    |  |  |  |  |
| Ala | Ala | Phe | Pro | Phe | Met | Asp | Ala | Met | Ala | Trp | Thr | His | Ala | Gly |    |  |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |    |  |  |  |  |
| Ile | Leu | Leu | Lys | His | Lys | Tyr | Ser | Phe | Leu | Val | Gly | Cys | Ala | Ser |    |  |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |    |  |  |  |  |
| Ile | Ser | Asp | Val | Ile | Ala | Gln | Val | Val | Phe | Val | Ala | Ile | Leu | Leu |    |  |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |    |  |  |  |  |
| His | Ser | His | Leu | Glu | Cys | Arg | Glu | Pro | Leu | Leu | Ile | Pro | Ile | Leu |    |  |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |    |  |  |  |  |
| Ser | Leu | Tyr | Met | Gly | Ala | Leu | Val | Arg | Cys | Thr | Thr | Leu | Cys | Leu |    |  |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |    |  |  |  |  |
| Gly | Tyr | Tyr | Lys | Asn | Ile | His | Asp | Ile | Ile | Pro | Asp | Arg | Ser | Gly |    |  |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |    |  |  |  |  |
| Pro | Glu | Leu | Gly | Gly | Asp | Ala | Thr | Ile | Arg | Lys | Met | Leu | Ser | Phe |    |  |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |    |  |  |  |  |
| Trp | Trp | Pro | Leu | Ala | Leu | Ile | Leu | Ala | Thr | Gln | Arg | Ile | Ser | Arg |    |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |    |  |  |  |  |
| Pro | Ile | Val | Asn | Leu | Phe | Val | Ser | Arg | Asp | Leu | Gly | Gly | Ser | Ser |    |  |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |    |  |  |  |  |
| Ala | Ala | Thr | Glu | Ala | Val | Ala | Ile | Leu | Thr | Ala | Thr | Tyr | Pro | Val |    |  |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |    |  |  |  |  |
| Gly | His | Met | Pro | Tyr | Gly | Trp | Leu | Thr | Glu | Ile | Arg | Ala | Val | Tyr |    |  |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |    |  |  |  |  |
| Pro | Ala | Phe | Asp | Lys | Asn | Asn | Pro | Ser | Asn | Lys | Leu | Val | Ser | Thr |    |  |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |    |  |  |  |  |
| Ser | Asn | Thr | Val | Thr | Ala | Ala | His | Ile | Lys | Lys | Phe | Thr | Phe | Val |    |  |  |  |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |    |  |  |  |  |
| Cys | Met | Ala | Leu | Ser | Leu | Thr | Leu | Cys | Phe | Val | Met | Phe | Trp | Thr |    |  |  |  |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |    |  |  |  |  |

|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Pro Asn Val Ser | Glu Lys Ile Leu Ile | Asp Ile Ile Gly Val Asp |
|                 | 350                 | 355 360                 |
| Phe Ala Phe Ala | Glu Leu Cys Val Val | Pro Leu Arg Ile Phe Ser |
|                 | 365                 | 370 375                 |
| Phe Phe Pro Val | Pro Val Thr Val Arg | Ala His Leu Thr Gly Trp |
|                 | 380                 | 385 390                 |
| Leu Met Thr Leu | Lys Lys Thr Phe Val | Leu Ala Pro Ser Ser Val |
|                 | 395                 | 400 405                 |
| Leu Arg Ile Ile | Val Leu Ile Ala Ser | Leu Val Val Leu Pro Tyr |
|                 | 410                 | 415 420                 |
| Leu Gly Val His | Gly Ala Thr Leu Gly | Val Gly Ser Leu Leu Ala |
|                 | 425                 | 430 435                 |
| Gly Phe Val Gly | Glu Ser Thr Met Val | Ala Ile Ala Ala Cys Tyr |
|                 | 440                 | 445 450                 |
| Val Tyr Arg Lys | Gln Lys Lys Lys Met | Glu Asn Glu Ser Ala Thr |
|                 | 455                 | 460 465                 |
| Glu Gly Glu Asp | Ser Ala Met Thr Asp | Met Pro Pro Thr Glu Glu |
|                 | 470                 | 475 480                 |
| Val Thr Asp Ile | Val Glu Met Arg Glu | Glu Asn Glu             |
|                 | 485                 | 490                     |

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 <222> 33, 66, 96, 387  
 <223> unknown base

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 cggcctattg tcaacctctt tgtttcccg gaccttggtg gcagttctgc 150  
 agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200  
 tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250  
 aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300  
 ggccacatc aagaagttca ccttcgtctg catggctctg tcaactcacgc 350  
 tctgtttcgt gatgttttgg acaccaacg tgtctgngaa aatcttgata 400  
 gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450

gcggatcttc tccttcttcc cagttccagt cacagtgagg gcgcatctca 500

ccgggtgggt gatgacactg aagaaaacct tcgtc 535

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<211> 434

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,  
293, 296, 305, 336, 358, 361

<223> unknown base

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caanaaattg gggagcaggg caaacagtn acgggcagcc cacatcaaga 100

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gttttgagaca cccaaagtgt ttgagaaaat tttgatagac atnatcgag 200

tggantttgc ctttgcagaa ntttgnngtg ttcctttgcg gattttctcc 250

tttttccag ttccagtcac agngagggcg catctcaccg gnggntgat 300

gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350

ttgtcctnat ngccagcctt gtggtcctac cctacctggg ggtgcacggt 400

gcgaccctgg gcgtgggttc cctcctggcg ggca 434

<210> 10

<211> 154

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 33, 49, 68, 83, 90, 98, 119

<223> unknown base

<400> 10

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acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100

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<210> 13  
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gctgcaggcc tcggtcatca ccctctacac catgtttgtc acctggtcag 900  
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 <213> Homo sapiens

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 35 40 45  
 Leu Phe Leu Gly Val Leu Val Ser Ile Ile Met Leu Ser Pro Gly  
 50 55 60

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Ser | Gln | Leu | Tyr | Lys | Leu | Pro | Trp | Val | Cys | Glu | Glu | Gly | 65  | 70  | 75  |
| Ala | Gly | Ile | Pro | Thr | Val | Leu | Gln | Gly | His | Ile | Asp | Cys | Gly | Ser | 80  | 85  | 90  |
| Leu | Leu | Gly | Tyr | Arg | Ala | Val | Tyr | Arg | Met | Cys | Phe | Ala | Thr | Ala | 95  | 100 | 105 |
| Ala | Phe | Phe | Phe | Phe | Phe | Phe | Thr | Leu | Leu | Met | Leu | Cys | Val | Ser | 110 | 115 | 120 |
| Ser | Ser | Arg | Asp | Pro | Arg | Ala | Ala | Ile | Gln | Asn | Gly | Phe | Trp | Phe | 125 | 130 | 135 |
| Phe | Lys | Phe | Leu | Ile | Leu | Val | Gly | Leu | Thr | Val | Gly | Ala | Phe | Tyr | 140 | 145 | 150 |
| Ile | Pro | Asp | Gly | Ser | Phe | Thr | Asn | Ile | Trp | Phe | Tyr | Phe | Gly | Val | 155 | 160 | 165 |
| Val | Gly | Ser | Phe | Leu | Phe | Ile | Leu | Ile | Gln | Leu | Val | Leu | Leu | Ile | 170 | 175 | 180 |
| Asp | Phe | Ala | His | Ser | Trp | Asn | Gln | Arg | Trp | Leu | Gly | Lys | Ala | Glu | 185 | 190 | 195 |
| Glu | Cys | Asp | Ser | Arg | Ala | Trp | Tyr | Ala | Gly | Leu | Phe | Phe | Phe | Thr | 200 | 205 | 210 |
| Leu | Leu | Phe | Tyr | Leu | Leu | Ser | Ile | Ala | Ala | Val | Ala | Leu | Met | Phe | 215 | 220 | 225 |
| Met | Tyr | Tyr | Thr | Glu | Pro | Ser | Gly | Cys | His | Glu | Gly | Lys | Val | Phe | 230 | 235 | 240 |
| Ile | Ser | Leu | Asn | Leu | Thr | Phe | Cys | Val | Cys | Val | Ser | Ile | Ala | Ala | 245 | 250 | 255 |
| Val | Leu | Pro | Lys | Val | Gln | Asp | Ala | Gln | Pro | Asn | Ser | Gly | Leu | Leu | 260 | 265 | 270 |
| Gln | Ala | Ser | Val | Ile | Thr | Leu | Tyr | Thr | Met | Phe | Val | Thr | Trp | Ser | 275 | 280 | 285 |
| Ala | Leu | Ser | Ser | Ile | Pro | Glu | Gln | Lys | Cys | Asn | Pro | His | Leu | Pro | 290 | 295 | 300 |
| Thr | Gln | Leu | Gly | Asn | Glu | Thr | Val | Val | Ala | Gly | Pro | Glu | Gly | Tyr | 305 | 310 | 315 |
| Glu | Thr | Gln | Trp | Trp | Asp | Ala | Pro | Ser | Ile | Val | Gly | Leu | Ile | Ile | 320 | 325 | 330 |
| Phe | Leu | Leu | Cys | Thr | Leu | Phe | Ile | Ser | Leu | Arg | Ser | Ser | Asp | His | 335 | 340 | 345 |
| Arg | Gln | Val | Asn | Ser | Leu | Met | Gln | Thr | Glu | Glu | Cys | Pro | Pro | Met |     |     |     |

|                 |                     |                     |     |     |
|-----------------|---------------------|---------------------|-----|-----|
| 350             |                     | 355                 |     | 360 |
| Leu Asp Ala Thr | Gln Gln Gln Gln Gln | Gln Val Ala Ala Cys | Glu |     |
| 365             |                     | 370                 |     | 375 |
| Gly Arg Ala Phe | Asp Asn Glu Gln Asp | Gly Val Thr Tyr Ser | Tyr |     |
| 380             |                     | 385                 |     | 390 |
| Ser Phe Phe His | Phe Cys Leu Val Leu | Ala Ser Leu His Val | Met |     |
| 395             |                     | 400                 |     | 405 |
| Met Thr Leu Thr | Asn Trp Tyr Lys Pro | Gly Glu Thr Arg Lys | Met |     |
| 410             |                     | 415                 |     | 420 |
| Ile Ser Thr Trp | Thr Ala Val Trp Val | Lys Ile Cys Ala Ser | Trp |     |
| 425             |                     | 430                 |     | 435 |
| Ala Gly Leu Leu | Leu Tyr Leu Trp Thr | Leu Val Ala Pro Leu | Leu |     |
| 440             |                     | 445                 |     | 450 |
| Leu Arg Asn Arg | Asp Phe Ser         |                     |     |     |
| 455             |                     |                     |     |     |

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cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950  
atgctaagaa aattgaagca ctgctaaacc ttcctagaaa cccttcagta 1000  
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Leu Cys Leu Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala  
20 25 30

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Glu | Val | Leu | Glu | Glu | Arg | Gln | Lys | Arg | Leu | Pro | Tyr | Val | 35  | 40  | 45  |
| Pro | Glu | Pro | Tyr | Tyr | Pro | Glu | Ser | Gly | Trp | Asp | Arg | Leu | Arg | Glu | 50  | 55  | 60  |
| Leu | Phe | Gly | Lys | Asp | Glu | Gln | Gln | Arg | Ile | Ser | Lys | Asp | Leu | Ala | 65  | 70  | 75  |
| Asn | Ile | Cys | Lys | Thr | Ala | Ala | Thr | Ala | Gly | Ile | Ile | Gly | Trp | Val | 80  | 85  | 90  |
| Tyr | Gly | Gly | Ile | Pro | Ala | Phe | Ile | His | Ala | Lys | Gln | Gln | Tyr | Ile | 95  | 100 | 105 |
| Glu | Gln | Ser | Gln | Ala | Glu | Ile | Tyr | His | Asn | Arg | Phe | Asp | Ala | Val | 110 | 115 | 120 |
| Gln | Ser | Ala | His | Arg | Ala | Ala | Thr | Arg | Gly | Phe | Ile | Arg | Tyr | Gly | 125 | 130 | 135 |
| Trp | Arg | Trp | Gly | Trp | Arg | Thr | Ala | Val | Phe | Val | Thr | Ile | Phe | Asn | 140 | 145 | 150 |
| Thr | Val | Asn | Thr | Ser | Leu | Asn | Val | Tyr | Arg | Asn | Lys | Asp | Ala | Leu | 155 | 160 | 165 |
| Ser | His | Phe | Val | Ile | Ala | Gly | Ala | Val | Thr | Gly | Ser | Leu | Phe | Arg | 170 | 175 | 180 |
| Ile | Asn | Val | Gly | Leu | Arg | Gly | Leu | Val | Ala | Gly | Gly | Ile | Ile | Gly | 185 | 190 | 195 |
| Ala | Leu | Leu | Gly | Thr | Pro | Val | Gly | Gly | Leu | Leu | Met | Ala | Phe | Gln | 200 | 205 | 210 |
| Lys | Tyr | Ala | Gly | Glu | Thr | Val | Gln | Glu | Arg | Lys | Gln | Lys | Asp | Arg | 215 | 220 | 225 |
| Lys | Ala | Leu | His | Glu | Leu | Lys | Leu | Glu | Glu | Trp | Lys | Gly | Arg | Leu | 230 | 235 | 240 |
| Gln | Val | Thr | Glu | His | Leu | Pro | Glu | Lys | Ile | Glu | Ser | Ser | Leu | Arg | 245 | 250 | 255 |
| Glu | Asp | Glu | Pro | Glu | Asn | Asp | Ala | Lys | Lys | Ile | Glu | Ala | Leu | Leu | 260 | 265 | 270 |
| Asn | Leu | Pro | Arg | Asn | Pro | Ser | Val | Ile | Asp | Lys | Gln | Asp | Lys | Asp | 275 | 280 | 285 |

<210> 29  
 <211> 324  
 <212> DNA  
 <213> Homo sapiens

<400> 29  
 cggaagtccc ttgaggagcg tcagaagcgg cttccctacg tcccagagcc 50

ctattacccg gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100  
 tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150  
 ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200  
 catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250  
 ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300  
 ttcgttcattg gctggcgccg aacc 324

<210> 30  
 <211> 377  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 262, 330, 371  
 <223> unknown base

<400> 30  
 tcaagtttgt cagtaggtcg agagaaggcc atggaggtgc cgccaccggc 50  
 accgcggagc ttttttctgt agagcattgt gcctatttcc ccgagttttt 100  
 gctgccgaag ctgtgactgc cgattcggaa gtccttgagg agcgtcagaa 150  
 gcggcttccc tacgtcccag agccctatta ccggaattt ggatgggacc 200  
 gcctccggga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250  
 cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggtgggt 300  
 gtatggggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350  
 agagccaggc agaaatttat nataacc 377

<210> 31  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 31  
 tcgtacagtt acgctctccc 20

<210> 32  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 32  
cttgaggagc gtcagaagcg 20

<210> 33  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 33  
ataacgaatg aagcctcgtg 20

<210> 34  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 34  
gctaataatct gtaagacggc agctacagca ggcattcattg 40

<210> 35  
<211> 1819  
<212> DNA  
<213> Homo sapiens

<400> 35  
gagccgcccgc cgcgcgcgcgc cgcgcgcactg cagccccagg ccccgcccc 50  
ccaccacagt ctgcgttgcg gccccgcctg ggccaggccc caaaggcaag 100  
gacaaagcag ctgtcaggga acctccgccg gagtccaatt tacgtgcagc 150  
tgccggcaac cacagggtcc aagatgggtt gcgggggctt cgcgtgttcc 200  
aagaactgcc tgtgcgccct caacctgctt tacaccttg ttagtgtgct 250  
gctaattgga attgctgcgt ggggcattgg ctccgggctg atttcagtc 300  
tccgagtggc cggcgtggc attgcagtgg gcatcttctt gttcctgatt 350  
gcttttagtg gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400  
tttttatatg attattctgt tacttggtatt tattgttcag tttctgtat 450  
cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500  
gttggttgga acaatacggc aagtgtcga aatgacatcc agagaaatct 550  
aaactgctgt ggggtccgaa gtgttaaccc aatgacacc tgtctggcta 600  
gctgtgttaa aagtaccac togtgtcgc catgtgtcc aatcatagga 650  
gaatatgctg gagaggtttt gagatttgtt ggtggcattg gcctgttctt 700



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cagttttaca gagatcctgg gtgtttggct gacctacaga tacaggaacc 750  
 agaaagaccc ccgcgcgaat cctagtgcac tcctttgatg agaaaacaag 800  
 gaagatttcc tttcgtatta tgatcttggt cactttctgt aattttctgt 850  
 taagctccat ttgccagttt aaggaaggaa acactatctg gaaaagtacc 900  
 ttattgatag tggaattata tttttttact ctatgtttct ctacatgttt 950  
 ttttctttcc gttgctgaaa aatatttgaa acttgtggtc tctgaagctc 1000  
 ggtggcacct ggaatttact gtattcattg tcgggcactg tccactgtgg 1050  
 cctttcttag cattttttacc tgcagaaaaa ctttgtatgg taccactgtg 1100  
 ttggttatat ggtgaatctg aacgtacatc tcactggtat aattatatgt 1150  
 agcactgtgc tgtgtagata gttcctactg gaaaaagagt ggaaatttat 1200  
 taaaatcaga aagtatgaga tcctgttatg ttaagggaaa tccaaattcc 1250  
 caattttttt tggctctttt aggaaagatt gttgtggtaa aaagtgttag 1300  
 tataaaaatg ataatttact tgtagtcttt tatgattaca ccaatgtatt 1350  
 ctagaaatag ttatgtctta ggaaattgtg gtttaatttt tgacttttac 1400  
 aggtaagtgc aaaggagaag tggtttcatg aaatgttcta atgtataata 1450  
 acatttacct tcagcctcca tcagaatgga acgagttttg agtaatcagg 1500  
 aagtatatct atatgatctt gatattgttt tataataatt tgaagtctaa 1550  
 aagactgcat ttttaaaca gttagtatta atgcgttggc ccacgtagca 1600  
 aaaagatatt tgattatctt aaaaattggt aaataccgtt ttcatgaaat 1650  
 ttctcagtat tgtaacagca acttgtcaaa cctaagcata tttgaatatg 1700  
 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750  
 gttaaaaaat taaaggacag aaacctttct ttgtgtatgc atgtttgaat 1800  
 taaaagaaag taatggaag 1819

<210> 36  
 <211> 204  
 <212> PRT  
 <213> Homo sapiens

<400> 36  
 Met Val Cys Gly Gly Phe Ala Cys Ser Lys Asn Cys Leu Cys Ala  
 1 5 10 15  
 Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Trp | Gly | Ile | Gly | Phe | Gly | Leu | Ile | Ser | Ser | Leu | Arg | Val |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Val | Gly | Val | Val | Ile | Ala | Val | Gly | Ile | Phe | Leu | Phe | Leu | Ile | Ala |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Leu | Val | Gly | Leu | Ile | Gly | Ala | Val | Lys | His | His | Gln | Val | Leu | Leu |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Phe | Phe | Tyr | Met | Ile | Ile | Leu | Leu | Leu | Val | Phe | Ile | Val | Gln | Phe |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Ser | Val | Ser | Cys | Ala | Cys | Leu | Ala | Leu | Asn | Gln | Glu | Gln | Gln | Gly |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Gln | Leu | Leu | Glu | Val | Gly | Trp | Asn | Asn | Thr | Ala | Ser | Ala | Arg | Asn |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Asp | Ile | Gln | Arg | Asn | Leu | Asn | Cys | Cys | Gly | Phe | Arg | Ser | Val | Asn |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Pro | Asn | Asp | Thr | Cys | Leu | Ala | Ser | Cys | Val | Lys | Ser | Asp | His | Ser |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Cys | Ser | Pro | Cys | Ala | Pro | Ile | Ile | Gly | Glu | Tyr | Ala | Gly | Glu | Val |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Leu | Arg | Phe | Val | Gly | Gly | Ile | Gly | Leu | Phe | Phe | Ser | Phe | Thr | Glu |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Ile | Leu | Gly | Val | Trp | Leu | Thr | Tyr | Arg | Tyr | Arg | Asn | Gln | Lys | Asp |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Pro | Arg | Ala | Asn | Pro | Ser | Ala | Phe | Leu |     |     |     |     |     |     |
|     |     |     |     | 200 |     |     |     |     |     |     |     |     |     |     |

<210> 37  
 <211> 390  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336  
 <223> unknown base

<400> 37  
 tgattggagc tgtaaaaaan tcttcaggtg ttgtnatttt tttatatgat 50  
 tattctgtaa nttgtattta ttgttcagtt ttntgtatct tgcgcttggt 100  
 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150  
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200  
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250  
 gtgaccactn gtgctcgcca tgtgctocaa tcataggaga atatgctgga 300

gagggttttga gatttgttgg tggcattggc ctgttnttca gttttacaga 350  
 gatcctgggt gtttggctga cctacagata caggaaccag 390

<210> 38  
 <211> 566  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 27  
 <223> unknown base

<400> 38  
 aatcccaaatt tccccaaattt ttttggncctt tttagggaat gatgtgttgt 50  
 ggtaaaaaagt gttagtataa aaatgataat ttactttagt tcttttatga 100  
 ttacaccaat gtattctaga atagttagt cttaggaaat tgtgggttaa 150  
 tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200  
 tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250  
 ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300  
 taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgag 350  
 ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400  
 ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450  
 gcatatttga atatgatctc ccataatttg aaattgaaat cgtatttgtgt 500  
 ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550  
 gttgtgcccc acttgc 566

<210> 39  
 <211> 264  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 84-85, 206  
 <223> unknown base

<400> 39  
 atgattattc tggtacttgt atttattgtt cagttttatg gtatcttgag 50  
 cttgttttagc cctgaaacc aggagcaaca gggnnacagc tctggaggt 100  
 tggttggcaa caatcacggc caagtgactc cgcaaatgac atcccagaga 150  
 aatcctaaac tgctgtgggt tccgaagtgt taaccctaat gacacctgtc 200

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tggtngctg tgttaaaagt gaccactcgt gctcgccatg tgctccaatc 250  
ataggagaat atgc 264

<210> 40  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 40  
acccacgtct gcgttgctgc c 21

<210> 41  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 41  
gagaatatgc tggagagg 18

<210> 42  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 42  
aggaatgcac taggattcgc gcgg 24

<210> 43  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 43  
ggccccaaag gcaaggacaa agcagctgtc agggaacctc cgccg 45

<210> 44  
<211> 2061  
<212> DNA  
<213> Homo sapiens

<400> 44  
cagtcacat gaagctgggc tgtgtcctca tggcctgggc cctctacett 50  
tcccttggtg tgctctgggt ggcccagatg ctactggctg ccagttttga 100

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gacgctgcag tgtgagggac ctgtctgcac tgaggagagc agctgccaca 150  
 cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200  
 tacactttca gtgaaccctt ccacctgatt gtgtcctatg actggctgat 250  
 cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300  
 gctgccaggc ctggcaagac tggccactga ctcagggtgac cttctaccga 350  
 gatggctcag ctctgggtcc ccccgggcct aacagggaat tctccatcac 400  
 cgtggtacaa aaggcagaca gcgggcacta ccactgcagt ggcatcttcc 450  
 agagccctgg tcttgggatc ccagaaacag catctgttgt ggctatcaca 500  
 gtccaagaac tgtttccagc gccaatcttc agagctgtac cctcagctga 550  
 accccaagca ggaagcccca tgaccctgag ttgtcagaca aagttgcccc 600  
 tgcagaggtc agctgccgcg ctctcttctt ccttctacaa ggatggaagg 650  
 atagtcaaaa gcagggggct ctctcagaa ttccagatcc ccacagcttc 700  
 agaagatcac tccgggtcat actggtgtga ggcagccact gaggacaacc 750  
 aagtttgga acagagcccc cagctagaga tcagagtga gggtgcttcc 800  
 agctctgctg cacctccac attgaatcca gctctcaga aatcagctgc 850  
 tccaggaact gctctgagg aggccctgg gcctctgcct ccgccgcaa 900  
 ccccatcttc tgaggatcca ggcttttctt ctctctggg gatgccagat 950  
 cctcatctgt atcaccagat gggccttctt ctcaaacaca tgcaggatgt 1000  
 gagagtcctc ctcggtcacc tgctcatgga gttgaggga ttatctggcc 1050  
 accagaagcc tgggaccaca aaggctactg ctgaatagaa gtaaacagtt 1100  
 catccatgat ctcaactaac caccocaata aatctgattc tttattttct 1150  
 cttctgtcc tgcacatatg cataagtact tttacaagtt gtcccagtg 1200  
 tttgttagaa taatgtagt aggtgagtgt aaataaatt atataaagt 1250  
 agaattagag tttagctata attgtgtatt ctctcttaac acaacagaat 1300  
 tctgctgtct agatcaggaa tttctatctg ttatatcgac cagaatgttg 1350  
 tgatttaaag agaactaatg gaagtggatt gaatacagca gtctcaactg 1400  
 ggggcaattt tgccccccag aggacattgg gcaatgtttg gagacatttt 1450  
 ggtcattata cttggggggg tgggggatgg tgggatgtgt gtctactggc 1500  
 atccagtaaa tagaagccag gggtgccgct aaacatccta taatgcacag 1550

ggcagtaccc cacaacgaaa aataatctgg cccaaaatgt cagttgtact 1600  
 gagtttgaga aaccccagcc taatgaaacc ctaggtgttg ggctctggaa 1650  
 tgggactttg tcccttctaa ttattatctc tttccagcct cattcagcta 1700  
 ttcttactga cataccagtc tttagctggg gctatggtct gttctttagt 1750  
 tctagtttgt atccctcaa aagccattat gttgaaatcc taatcccaa 1800  
 ggtgatggca ttaagaagtg ggcctttggg aagtgattag atcaggagtg 1850  
 cagagccctc atgattagga ttagtgcctt tatttaaaaa ggccccagag 1900  
 agctaactca cccttcacc atatgaggac gtggcaagaa gatgacatgt 1950  
 atgagaacca aaaaacagct gtcgccaac accgactctg tcgttgccct 2000  
 gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050  
 ttgtagccta a 2061

<210> 45  
 <211> 359  
 <212> PRT  
 <213> Homo sapiens

<400> 45  
 Met Lys Leu Gly Cys Val Leu Met Ala Trp Ala Leu Tyr Leu Ser  
 1 5 10 15  
 Leu Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe  
 20 25 30  
 Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser  
 35 40 45  
 Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe  
 50 55 60  
 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val  
 65 70 75  
 Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe  
 80 85 90  
 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp  
 95 100 105  
 Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly  
 110 115 120  
 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys  
 125 130 135  
 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro  
 140 145 150

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Gly | Ile | Pro | Glu | Thr | Ala | Ser | Val | Val | Ala | Ile | Thr | Val | 155 | 160 | 165 |
| Gln | Glu | Leu | Phe | Pro | Ala | Pro | Ile | Leu | Arg | Ala | Val | Pro | Ser | Ala | 170 | 175 | 180 |
| Glu | Pro | Gln | Ala | Gly | Ser | Pro | Met | Thr | Leu | Ser | Cys | Gln | Thr | Lys | 185 | 190 | 195 |
| Leu | Pro | Leu | Gln | Arg | Ser | Ala | Ala | Arg | Leu | Leu | Phe | Ser | Phe | Tyr | 200 | 205 | 210 |
| Lys | Asp | Gly | Arg | Ile | Val | Gln | Ser | Arg | Gly | Leu | Ser | Ser | Glu | Phe | 215 | 220 | 225 |
| Gln | Ile | Pro | Thr | Ala | Ser | Glu | Asp | His | Ser | Gly | Ser | Tyr | Trp | Cys | 230 | 235 | 240 |
| Glu | Ala | Ala | Thr | Glu | Asp | Asn | Gln | Val | Trp | Lys | Gln | Ser | Pro | Gln | 245 | 250 | 255 |
| Leu | Glu | Ile | Arg | Val | Gln | Gly | Ala | Ser | Ser | Ser | Ala | Ala | Pro | Pro | 260 | 265 | 270 |
| Thr | Leu | Asn | Pro | Ala | Pro | Gln | Lys | Ser | Ala | Ala | Pro | Gly | Thr | Ala | 275 | 280 | 285 |
| Pro | Glu | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Pro | Pro | Pro | Thr | Pro | Ser | 290 | 295 | 300 |
| Ser | Glu | Asp | Pro | Gly | Phe | Ser | Ser | Pro | Leu | Gly | Met | Pro | Asp | Pro | 305 | 310 | 315 |
| His | Leu | Tyr | His | Gln | Met | Gly | Leu | Leu | Leu | Lys | His | Met | Gln | Asp | 320 | 325 | 330 |
| Val | Arg | Val | Leu | Leu | Gly | His | Leu | Leu | Met | Glu | Leu | Arg | Glu | Leu | 335 | 340 | 345 |
| Ser | Gly | His | Gln | Lys | Pro | Gly | Thr | Thr | Lys | Ala | Thr | Ala | Glu |     | 350 | 355 |     |

<210> 46  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 46  
 tgggctgtgt cctcatgg 18  
  
 <210> 47  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

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<220>  
<223> Synthetic oligonucleotide probe

<400> 47  
tttccagcgc caattctc 18

<210> 48  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 48  
agttcttgga ctgtgatagc cac 23

<210> 49  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 49  
aaacttggtt gtcctcagtg gctg 24

<210> 50  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 50  
gtgagggacc tgtctgcact gaggagagca gctgccacac ggagg 45

<210> 51  
<211> 2181  
<212> DNA  
<213> Homo sapiens

<400> 51  
cccacgcgtc cgcccacgcg tccgcccacg ggtccgcca cgcgtccggg 50  
ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100  
gaagtagctc tggctgtgat ggggatotta ctgggcctgc tactcctggg 150  
gcacctaaca gtggacactt atggcogtcc catcctggaa gtgccagaga 200  
gtgtaacagg accttggaag ggggatgtga atcttcctg cacctatgac 250  
cccctgcaag gctacacca agtcttggtg aagtggctgg tacaacgtgg 300  
ctcagaccct gtcaccatct ttctaogtga ctcttctgga gaccatatcc 350



agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggttccagga 400  
 gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450  
 cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500  
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 Asp Gly Asn Gln Val Val Arg Asp Lys Ile Thr Glu Leu Arg Val  
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 Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys  
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|                 |   |                         |     |     |     |
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| Gln Thr Asn Asn | Gln Glu Pro Ile Lys                         | Val Ala Thr Leu Ser Thr | 185 | 190 | 195 |
| Leu Leu Phe Lys | Pro Ala Val Ile Ala Asp Ser Gly Ser Tyr Phe |                         | 200 | 205 | 210 |
| Cys Thr Ala Lys | Gly Gln Val Gly Ser Glu Gln His Ser Asp Ile |                         | 215 | 220 | 225 |
| Val Lys Phe Val | Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys |                         | 230 | 235 | 240 |
| Thr Glu Ala Pro | Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser |                         | 245 | 250 | 255 |
| Thr Val Lys Gln | Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr |                         | 260 | 265 | 270 |
| Leu Gly Glu Thr | Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe |                         | 275 | 280 | 285 |
| Ala Ile Ile Leu | Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr |                         | 290 | 295 | 300 |
| Met Ala Tyr Ile | Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His |                         | 305 | 310 | 315 |
| Val Tyr Glu Ala | Ala Arg                                     |                         | 320 |     |     |

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<223> Synthetic oligonucleotide probe

<400> 55

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<210> 56

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 56

agccaaatcc agcagctggc ttac 24

<210> 57

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 57

tgatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 58

<211> 2458

<212> DNA

<213> Homo sapiens

<400> 58

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 <212> PRT  
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 Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln  
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 Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu  
 65 70 75  
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 Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp  
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 Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val  
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 140 145 150  
 Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr  
 155 160 165  
 Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro  
 170 175 180

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Lys | Ser | Arg | Ile | Asp | Tyr | Asn | His | Pro | Gly | Arg | Val | Leu | Leu | 185 | 190 | 195 |
| Gln | Asn | Leu | Thr | Met | Ser | Tyr | Ser | Gly | Leu | Tyr | Gln | Cys | Thr | Ala | 200 | 205 | 210 |
| Gly | Asn | Glu | Ala | Gly | Lys | Glu | Ser | Cys | Val | Val | Arg | Val | Thr | Val | 215 | 220 | 225 |
| Gln | Tyr | Val | Gln | Ser | Ile | Gly | Met | Val | Ala | Gly | Ala | Val | Thr | Gly | 230 | 235 | 240 |
| Ile | Val | Ala | Gly | Ala | Leu | Leu | Ile | Phe | Leu | Leu | Val | Trp | Leu | Leu | 245 | 250 | 255 |
| Ile | Arg | Arg | Lys | Asp | Lys | Glu | Arg | Tyr | Glu | Glu | Glu | Glu | Arg | Pro | 260 | 265 | 270 |
| Asn | Glu | Ile | Arg | Glu | Asp | Ala | Glu | Ala | Pro | Lys | Ala | Arg | Leu | Val | 275 | 280 | 285 |
| Lys | Pro | Ser | Ser | Ser | Ser | Ser | Gly | Ser | Arg | Ser | Ser | Arg | Ser | Gly | 290 | 295 | 300 |
| Ser | Ser | Ser | Thr | Arg | Ser | Thr | Ala | Asn | Ser | Ala | Ser | Arg | Ser | Gln | 305 | 310 | 315 |
| Arg | Thr | Leu | Ser | Thr | Asp | Ala | Ala | Pro | Gln | Pro | Gly | Leu | Ala | Thr | 320 | 325 | 330 |
| Gln | Ala | Tyr | Ser | Leu | Val | Gly | Pro | Glu | Val | Arg | Gly | Ser | Glu | Pro | 335 | 340 | 345 |
| Lys | Lys | Val | His | His | Ala | Asn | Leu | Thr | Lys | Ala | Glu | Thr | Thr | Pro | 350 | 355 | 360 |
| Ser | Met | Ile | Pro | Ser | Gln | Ser | Arg | Ala | Phe | Gln | Thr | Val |     |     | 365 | 370 |     |

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 <223> Synthetic oligonucleotide probe

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<210> 61  
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<212> DNA  
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<210> 63  
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 <212> PRT  
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<400> 64  
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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Glu | Asp | Val | Asn | Lys | Thr | Leu | Pro | Asn | Leu | Gln | Val | Val | Asn | His |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Gln | Gln | Gly | Pro | His | His | Arg | His | Ile | Leu | Lys | Leu | Leu | Pro | Ser |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Met | Glu | Ala | Thr | Gly | Gly | Glu | Lys | Ser | Ser | Thr | Pro | Ile | Lys | Gly |  |

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|                     |   |     |
|---------------------|---|-----|
| 320                 | 325                                     | 330 |
| Pro Lys Arg Gly His | Pro Arg Gln Asn Leu His Lys His Phe Asp |     |
| 335                 | 340                                     | 345 |
| Ile Asn Glu His Leu | Pro Trp Met Ile Val Leu Phe Leu Leu Leu |     |
| 350                 | 355                                     | 360 |
| Val Leu Val Val Ile | Val Val Cys Ser Ile Arg Lys Ser Ser Arg |     |
| 365                 | 370                                     | 375 |
| Thr Leu Lys Lys Gly | Pro Arg Gln Asp Pro Ser Ala Ile Val Glu |     |
| 380                 | 385                                     | 390 |
| Lys Ala Gly Leu Lys | Lys Ser Met Thr Pro Thr Gln Asn Arg Glu |     |
| 395                 | 400                                     | 405 |
| Lys Trp Ile Tyr Tyr | Cys Asn Gly His Gly Ile Asp Ile Leu Lys |     |
| 410                 | 415                                     | 420 |
| Leu Val Ala Ala Gln | Val Gly Ser Gln Trp Lys Asp Ile Tyr Gln |     |
| 425                 | 430                                     | 435 |
| Phe Leu Cys Asn Ala | Ser Glu Arg Glu Val Ala Ala Phe Ser Asn |     |
| 440                 | 445                                     | 450 |
| Gly Tyr Thr Ala Asp | His Glu Arg Ala Tyr Ala Ala Leu Gln His |     |
| 455                 | 460                                     | 465 |
| Trp Thr Ile Arg Gly | Pro Glu Ala Ser Leu Ala Gln Leu Ile Ser |     |
| 470                 | 475                                     | 480 |
| Ala Leu Arg Gln His | Arg Arg Asn Asp Val Val Glu Lys Ile Arg |     |
| 485                 | 490                                     | 495 |
| Gly Leu Met Glu Asp | Thr Thr Gln Leu Glu Thr Asp Lys Leu Ala |     |
| 500                 | 505                                     | 510 |
| Leu Pro Met Ser Pro | Ser Pro Leu Ser Pro Ser Pro Ile Pro Ser |     |
| 515                 | 520                                     | 525 |
| Pro Asn Ala Lys Leu | Glu Asn Ser Ala Leu Leu Thr Val Glu Pro |     |
| 530                 | 535                                     | 540 |
| Ser Pro Gln Asp Lys | Asn Lys Gly Phe Phe Val Asp Glu Ser Glu |     |
| 545                 | 550                                     | 555 |
| Pro Leu Leu Arg Cys | Asp Ser Thr Ser Ser Gly Ser Ser Ala Leu |     |
| 560                 | 565                                     | 570 |
| Ser Arg Asn Gly Ser | Phe Ile Thr Lys Glu Lys Lys Asp Thr Val |     |
| 575                 | 580                                     | 585 |
| Leu Arg Gln Val Arg | Leu Asp Pro Cys Asp Leu Gln Pro Ile Phe |     |
| 590                 | 595                                     | 600 |
| Asp Asp Met Leu His | Phe Leu Asn Pro Glu Glu Leu Arg Val Ile |     |
| 605                 | 610                                     | 615 |

Glu Glu Ile Pro Gln Ala Glu Asp Lys Leu Asp Arg Leu Phe Glu  
620 625 630

Ile Ile Gly Val Lys Ser Gln Glu Ala Ser Gln Thr Leu Leu Asp  
635 640 645

Ser Val Tyr Ser His Leu Pro Asp Leu Leu  
650 655

<210> 65

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 65

gtagcagtgc acatggggtg ttgg 24

<210> 66

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 66

accgcacatc ctcagtctct gtcc 24

<210> 67

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 67

acgatgatcg cgggctccct tctcctgctt ggattcctta gcaccaccac 50

<210> 68

<211> 2412

<212> DNA

<213> Homo sapiens

<400> 68

atgggaagcc agtaacactg tggcctacta tctcttccgt ggtgccatct 50

acatttttgg gactcgggaa ttatgaggta gaggtggagg cggagccgga 100

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ttgaagcccc cttctcattc cgatcgcttt ttggccttga tgatttgaaa 200

ataagtctg ttgcaccaga tgcagatgct gttgctgcac agatcctgtc 250

actgctgcc a ttgaagtttt ttccaatcat cgtcattggg atcattgcat 300  
 tgatattagc actggccatt ggtctgggca tccacttoga ctgctcaggg 350  
 aagtacagat gtcgctcatc ctttaagtgt atcgagctga tagctcgatg 400  
 tgacggagtc tcggattgca aagacgggga ggacgagtag cgctgtgtcc 450  
 ggggtgggtgg tcagaatgcc gtgctccagg tgttcacagc tgcttcgtgg 500  
 aagaccatgt gctccgatga ctggaagggt cactacgcaa atgttgccctg 550  
 tgcccaactg ggtttcccaa gctatgtgag ttcagataac ctcagagtga 600  
 gctcgtgga ggggcagttc cgggaggagt ttgtgtccat cgatcacctc 650  
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 gggatgtgcc tctggccacg tggttacctt gcagtgcaca gcctgtggtc 750  
 atagaagggg ctacagctca cgcctcgtgg gtggaacat gtccttctc 800  
 tcgcagtggc cctggcaggc cagccttcag ttccagggt accacctgtg 850  
 cgggggctct gtcctcacgc ccctgtggat catcactgct gcacactgtg 900  
 tttatgactt gtacctcccc aagtcatgga ccatccaggt gggcttagtt 950  
 tccctgttgg acaatccagc cccatcccac ttgggtggaga agattgtcta 1000  
 ccacagcaag tacaagccaa agaggctggg caatgacatc gcccttatga 1050  
 agctggccgg gccactcacg ttcaatgaaa tgatccagcc tgtgtgcctg 1100  
 cccaactctg aagagaactt ccccgatgga aaagtgtgct ggacgtcagg 1150  
 atggggggcc acagaggatg gaggtgacgc ctcccctgtc ctgaaccacg 1200  
 cggccgtccc tttgatttcc aacaagatct gcaaccacag ggacgtgtac 1250  
 ggtggcatca tctccccctc catgctctgc gcgggctacc tgacgggtgg 1300  
 cgtggacagc tgccaggggg acagcggggg gcccttgtg tgtcaagaga 1350  
 ggaggctgtg gaagttagtg ggagcgacca gctttggcat cggctgcgca 1400  
 gaggtgaaca agcctggggg gtacaccctg gtcacctcct tcctggactg 1450  
 gatccacgag cagatggaga gagacctaaa aacctgaaga ggaaggggac 1500  
 aagtagccac ctgagttcct gaggtgatga agacagcccg atcctcccct 1550  
 ggactccgtg gtaggaacct gcacacgagc agacaccctt ggagctctga 1600  
 gttccggcac cagtagcagg cccgaaagag gcacccttcc atctgattcc 1650  
 agcacaacct tcaagctgct ttttgttttt tgtttttttg aggtggagtc 1700

tcgctctggt gccaggtg gagtgcagt gcgaaatccc tgctcactgc 1750  
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 tagtagagac agggtttcac catgttggcc aggctgctct caaaccctg 1900  
 acctcaaagt atgtgcctgc ttcagcctcc cacagtgcgt ggattacagg 1950  
 catggggcac cagcctagc ctcacgctcc tttctgatct tctaagaa 2000  
 caaagaagc agcaacttgc aaggggcgcc tttccactg gtccatctgg 2050  
 ttttctctcc agggcttgc aaaattcctg acgagataag cagttatgtg 2100  
 acctcacgtg caaagccacc aacagccact cagaaaagac gcaccagccc 2150  
 agaagtgcag aactgcagtc actgcacgtt ttcattctta gggaccagaa 2200  
 ccaaaccac cctttctact tccaagactt attttcacat gtggggaggt 2250  
 taatctagga atgactcgtt taaggcctat tttcatgatt tctttgtagc 2300  
 atttggtgct tgacgtatta ttgtcctttg attccaaata atatgtttcc 2350  
 ttccctcatt gtctggcgtg tctgcgtgga ctggtgacgt gaatcaaaat 2400  
 catccactga aa 2412

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 <211> 453  
 <212> PRT  
 <213> Homo sapiens

<400> 69  
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 1 5 10 15  
 Arg Ser Leu Phe Gly Leu Asp Asp Leu Lys Ile Ser Pro Val Ala  
 20 25 30  
 Pro Asp Ala Asp Ala Val Ala Ala Gln Ile Leu Ser Leu Leu Pro  
 35 40 45  
 Leu Lys Phe Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile  
 50 55 60  
 Leu Ala Leu Ala Ile Gly Leu Gly Ile His Phe Asp Cys Ser Gly  
 65 70 75  
 Lys Tyr Arg Cys Arg Ser Ser Phe Lys Cys Ile Glu Leu Ile Ala  
 80 85 90  
 Arg Cys Asp Gly Val Ser Asp Cys Lys Asp Gly Glu Asp Glu Tyr  
 95 100 105  
 Arg Cys Val Arg Val Gly Gly Gln Asn Ala Val Leu Gln Val Phe

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| 110                                 | 115                     | 120 |
|-------------------------------------|-------------------------|-----|
| Thr Ala Ala Ser Trp Lys Thr Met Cys | Ser Asp Asp Trp Lys Gly |     |
| 125                                 | 130                     | 135 |
| His Tyr Ala Asn Val Ala Cys Ala Gln | Leu Gly Phe Pro Ser Tyr |     |
| 140                                 | 145                     | 150 |
| Val Ser Ser Asp Asn Leu Arg Val Ser | Ser Leu Glu Gly Gln Phe |     |
| 155                                 | 160                     | 165 |
| Arg Glu Glu Phe Val Ser Ile Asp His | Leu Leu Pro Asp Asp Lys |     |
| 170                                 | 175                     | 180 |
| Val Thr Ala Leu His His Ser Val Tyr | Val Arg Glu Gly Cys Ala |     |
| 185                                 | 190                     | 195 |
| Ser Gly His Val Val Thr Leu Gln Cys | Thr Ala Cys Gly His Arg |     |
| 200                                 | 205                     | 210 |
| Arg Gly Tyr Ser Ser Arg Ile Val Gly | Gly Asn Met Ser Leu Leu |     |
| 215                                 | 220                     | 225 |
| Ser Gln Trp Pro Trp Gln Ala Ser Leu | Gln Phe Gln Gly Tyr His |     |
| 230                                 | 235                     | 240 |
| Leu Cys Gly Gly Ser Val Ile Thr Pro | Leu Trp Ile Ile Thr Ala |     |
| 245                                 | 250                     | 255 |
| Ala His Cys Val Tyr Asp Leu Tyr Leu | Pro Lys Ser Trp Thr Ile |     |
| 260                                 | 265                     | 270 |
| Gln Val Gly Leu Val Ser Leu Leu Asp | Asn Pro Ala Pro Ser His |     |
| 275                                 | 280                     | 285 |
| Leu Val Glu Lys Ile Val Tyr His Ser | Lys Tyr Lys Pro Lys Arg |     |
| 290                                 | 295                     | 300 |
| Leu Gly Asn Asp Ile Ala Leu Met Lys | Leu Ala Gly Pro Leu Thr |     |
| 305                                 | 310                     | 315 |
| Phe Asn Glu Met Ile Gln Pro Val Cys | Leu Pro Asn Ser Glu Glu |     |
| 320                                 | 325                     | 330 |
| Asn Phe Pro Asp Gly Lys Val Cys Trp | Thr Ser Gly Trp Gly Ala |     |
| 335                                 | 340                     | 345 |
| Thr Glu Asp Gly Gly Asp Ala Ser Pro | Val Leu Asn His Ala Ala |     |
| 350                                 | 355                     | 360 |
| Val Pro Leu Ile Ser Asn Lys Ile Cys | Asn His Arg Asp Val Tyr |     |
| 365                                 | 370                     | 375 |
| Gly Gly Ile Ile Ser Pro Ser Met Leu | Cys Ala Gly Tyr Leu Thr |     |
| 380                                 | 385                     | 390 |
| Gly Gly Val Asp Ser Cys Gln Gly Asp | Ser Gly Gly Pro Leu Val |     |
| 395                                 | 400                     | 405 |



Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe  
 410 415 420

Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg  
 425 430 435

Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp  
 440 445 450

Leu Lys Thr

<210> 70  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 70  
 tgacatcgcc cttatgaagc tggc 24

<210> 71  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 71  
 tacacgtccc tgtggttgca gatc 24

<210> 72  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 72  
 cgttcaatgc agaaatgatc cagcctgtgt gcctgcccac ctctgaagag 50

<210> 73  
 <211> 3305  
 <212> DNA  
 <213> Homo sapiens

<400> 73  
 cccacgcgtc cgtcctagtc cccggggccaa ctcgacagc ttgctcattt 50  
 attgcaacgg tcaaggctgg cttgtgccag aacggcgcgc gcgcgcgcac 100  
 gcacgcacac acacgggggg aaactttttt aaaaatgaaa ggctagaaga 150  
 gctcagcggc ggcgcgggcg ctgcgcgagg gctccggagc tgactcgccg 200

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 gccggcgacg atggcagcgc gcccgctgcc cgtgtcccc gcccgcgccc 350  
 tctgtctgc cctggccggt gctctgctcg cgccctgcga ggcccgaggg 400  
 gtgagcttat ggaaccaagg aagagctgat gaagttgtca gtgcctctgt 450  
 tcggagtggg gacctctgga tcccagtga gagcttcgac tccaagaatc 500  
 atccagaagt gctgaatatt cgactacaac gggaaagcaa agaactgac 550  
 ataaatctgg aaagaaatga aggtctcatt gccagcagtt tcacggaaac 600  
 ccactatctg caagacggta ctgatgtctc cctcgctcga aattacacgg 650  
 gtcactgtta ctacatgga catgtacggg gatattctga ttcagcagtc 700  
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 tcccagcgaa gaagctgaaa agcgtccggg gatcatgtgg atcacatcac 850  
 aacacaccaa acctcgctgc aaagaatgtg tttccaccac cctctcagac 900  
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 agctggtgat cgtggcagac aaccgagagt ttcagaggca aggaaaagat 1000  
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 tgacaatgcg cagcttgtca gtgggggtta tttccaagg accaccatcg 1250  
 gcatggcccc aatcatgagc atgtgcacgg cagaccagtc tgggggaatt 1300  
 gtcatggacc attcagacaa tccccttggg gcagccgtga ccctggcaca 1350  
 tgagctgggc cacaatttcg ggatgaatca tgacacactg gacaggggct 1400  
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 accgggtacc catttcccat ggtgttcagc agttgcagca ggaaggactt 1500  
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 catagaaaca aacatccctc tgcagcaagg aggccggatt ctgtgccggg 2150  
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 gaaat 3305

<210> 74  
 <211> 735  
 <212> PRT  
 <213> Homo sapiens

<400> 74  
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 Leu Ala Leu Ala Gly Ala Leu Leu Ala Pro Cys Glu Ala Arg Gly  
                   20                  25                  30  
 Val Ser Leu Trp Asn Gln Gly Arg Ala Asp Glu Val Val Ser Ala  
                   35                  40                  45  
 Ser Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp  
                   50                  55                  60  
 Ser Lys Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu  
                   65                  70                  75  
 Ser Lys Glu Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile  
                   80                  85                  90  
 Ala Ser Ser Phe Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp  
                   95                  100                  105  
 Val Ser Leu Ala Arg Asn Tyr Thr Gly His Cys Tyr Tyr His Gly  
                   110                  115                  120  
 His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys  
                   125                  130                  135  
 Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val  
                   140                  145                  150  
 Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro  
                   155                  160                  165  
 Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His  
                   170                  175                  180  
 Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser  
                   185                  190                  195  
 Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr  
                   200                  205                  210

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|   |     |     |     |
|---|-----|-----|-----|
| Lys Tyr Val Glu Leu Val Ile Val Ala Asp Asn Arg Glu Phe Gln | 215 | 220 | 225 |
| Arg Gln Gly Lys Asp Leu Glu Lys Val Lys Gln Arg Leu Ile Glu | 230 | 235 | 240 |
| Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro Leu Asn Ile Arg | 245 | 250 | 255 |
| Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met Asp Lys Cys | 260 | 265 | 270 |
| Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe Leu Asp | 275 | 280 | 285 |
| Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn Ala | 290 | 295 | 300 |
| Gln Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met | 305 | 310 | 315 |
| Ala Pro Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile | 320 | 325 | 330 |
| Val Met Asp His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu | 335 | 340 | 345 |
| Ala His Glu Leu Gly His Asn Phe Gly Met Asn His Asp Thr Leu | 350 | 355 | 360 |
| Asp Arg Gly Cys Ser Cys Gln Met Ala Val Glu Lys Gly Gly Cys | 365 | 370 | 375 |
| Ile Met Asn Ala Ser Thr Gly Tyr Pro Phe Pro Met Val Phe Ser | 380 | 385 | 390 |
| Ser Cys Ser Arg Lys Asp Leu Glu Thr Ser Leu Glu Lys Gly Met | 395 | 400 | 405 |
| Gly Val Cys Leu Phe Asn Leu Pro Glu Val Arg Glu Ser Phe Gly | 410 | 415 | 420 |
| Gly Gln Lys Cys Gly Asn Arg Phe Val Glu Glu Gly Glu Glu Cys | 425 | 430 | 435 |
| Asp Cys Gly Glu Pro Glu Glu Cys Met Asn Arg Cys Cys Asn Ala | 440 | 445 | 450 |
| Thr Thr Cys Thr Leu Lys Pro Asp Ala Val Cys Ala His Gly Leu | 455 | 460 | 465 |
| Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala Gly Thr Ala Cys Arg | 470 | 475 | 480 |
| Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe Cys Thr Gly Ala | 485 | 490 | 495 |
| Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp Gly His Ser |     |     |     |

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| 500                                 | 505                     | 510 |
|-------------------------------------|-------------------------|-----|
| Cys Gln Asp Val Asp Gly Tyr Cys Tyr | Asn Gly Ile Cys Gln Thr |     |
| 515                                 | 520                     | 525 |
| His Glu Gln Gln Cys Val Thr Leu Trp | Gly Pro Gly Ala Lys Pro |     |
| 530                                 | 535                     | 540 |
| Ala Pro Gly Ile Cys Phe Glu Arg Val | Asn Ser Ala Gly Asp Pro |     |
| 545                                 | 550                     | 555 |
| Tyr Gly Asn Cys Gly Lys Val Ser Lys | Ser Ser Phe Ala Lys Cys |     |
| 560                                 | 565                     | 570 |
| Glu Met Arg Asp Ala Lys Cys Gly Lys | Ile Gln Cys Gln Gly Gly |     |
| 575                                 | 580                     | 585 |
| Ala Ser Arg Pro Val Ile Gly Thr Asn | Ala Val Ser Ile Glu Thr |     |
| 590                                 | 595                     | 600 |
| Asn Ile Pro Leu Gln Gln Gly Gly Arg | Ile Leu Cys Arg Gly Thr |     |
| 605                                 | 610                     | 615 |
| His Val Tyr Leu Gly Asp Asp Met Pro | Asp Pro Gly Leu Val Leu |     |
| 620                                 | 625                     | 630 |
| Ala Gly Thr Lys Cys Ala Asp Gly Lys | Ile Cys Leu Asn Arg Gln |     |
| 635                                 | 640                     | 645 |
| Cys Gln Asn Ile Ser Val Phe Gly Val | His Glu Cys Ala Met Gln |     |
| 650                                 | 655                     | 660 |
| Cys His Gly Arg Gly Val Cys Asn Asn | Arg Lys Asn Cys His Cys |     |
| 665                                 | 670                     | 675 |
| Glu Ala His Trp Ala Pro Pro Phe Cys | Asp Lys Phe Gly Phe Gly |     |
| 680                                 | 685                     | 690 |
| Gly Ser Thr Asp Ser Gly Pro Ile Arg | Gln Ala Glu Ala Arg Gln |     |
| 695                                 | 700                     | 705 |
| Glu Ala Ala Glu Ser Asn Arg Glu Arg | Gly Gln Gly Gln Glu Pro |     |
| 710                                 | 715                     | 720 |
| Val Gly Ser Gln Glu His Ala Ser Thr | Ala Ser Leu Thr Leu Ile |     |
| 725                                 | 730                     | 735 |

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<210> 79  
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<400> 84  
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                   20                  25                  30  
 Thr Ser Met Pro Glu Ala Thr Ala Ala Glu Thr Thr Lys Pro Ser  
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<210> 86  
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<220>

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<210> 89

<211> 2956

<212> DNA

<213> Homo sapiens

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05978299 101501

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 <213> Homo sapiens

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 Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala  
 35 40 45  
 Ala Asp Gly Pro Pro Ala Ala Asp Gly Glu Asp Gly Gln Asp Pro  
 50 55 60  
 His Ser Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile  
 65 70 75  
 Gln Ser Ala Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly  
 80 85 90  
 His Cys Gln Arg Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys  
 95 100 105  
 Tyr Asn Ser Met Glu Asp Ala Lys Val Tyr Val Ala Lys Val Asp  
 110 115 120  
 Cys Thr Ala His Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly  
 125 130 135  
 Tyr Pro Thr Leu Lys Leu Phe Lys Pro Gly Gln Glu Ala Val Lys  
 140 145 150  
 Tyr Gln Gly Pro Arg Asp Phe Gln Thr Leu Glu Asn Trp Met Leu  
 155 160 165  
 Gln Thr Leu Asn Glu Glu Pro Val Thr Pro Glu Pro Glu Val Glu  
 170 175 180

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Ser | Ala | Pro | Glu | Leu | Lys | Gln | Gly | Leu | Tyr | Glu | Leu | Ser | 185 | 190 | 195 |
| Ala | Ser | Asn | Phe | Glu | Leu | His | Val | Ala | Gln | Gly | Asp | His | Phe | Ile | 200 | 205 | 210 |
| Lys | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Ala | Leu | Ala | Pro | 215 | 220 | 225 |
| Thr | Trp | Glu | Gln | Leu | Ala | Leu | Gly | Leu | Glu | His | Ser | Glu | Thr | Val | 230 | 235 | 240 |
| Lys | Ile | Gly | Lys | Val | Asp | Cys | Thr | Gln | His | Tyr | Glu | Leu | Cys | Ser | 245 | 250 | 255 |
| Gly | Asn | Gln | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Trp | Phe | Arg | Asp | 260 | 265 | 270 |
| Gly | Lys | Lys | Val | Asp | Gln | Tyr | Lys | Gly | Lys | Arg | Asp | Leu | Glu | Ser | 275 | 280 | 285 |
| Leu | Arg | Glu | Tyr | Val | Glu | Ser | Gln | Leu | Gln | Arg | Thr | Glu | Thr | Gly | 290 | 295 | 300 |
| Ala | Thr | Glu | Thr | Val | Thr | Pro | Ser | Glu | Ala | Pro | Val | Leu | Ala | Ala | 305 | 310 | 315 |
| Glu | Pro | Glu | Ala | Asp | Lys | Gly | Thr | Val | Leu | Ala | Leu | Thr | Glu | Asn | 320 | 325 | 330 |
| Asn | Phe | Asp | Asp | Thr | Ile | Ala | Glu | Gly | Ile | Thr | Phe | Ile | Lys | Phe | 335 | 340 | 345 |
| Tyr | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Thr | Leu | Ala | Pro | Thr | Trp | 350 | 355 | 360 |
| Glu | Glu | Leu | Ser | Lys | Lys | Glu | Phe | Pro | Gly | Leu | Ala | Gly | Val | Lys | 365 | 370 | 375 |
| Ile | Ala | Glu | Val | Asp | Cys | Thr | Ala | Glu | Arg | Asn | Ile | Cys | Ser | Lys | 380 | 385 | 390 |
| Tyr | Ser | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Leu | Phe | Arg | Gly | Gly | 395 | 400 | 405 |
| Lys | Lys | Val | Ser | Glu | His | Ser | Gly | Gly | Arg | Asp | Leu | Asp | Ser | Leu | 410 | 415 | 420 |
| His | Arg | Phe | Val | Leu | Ser | Gln | Ala | Lys | Asp | Glu | Leu |     |     |     | 425 | 430 |     |

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<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<400> 92  
ccaagccaac acactctaca g 21

<210> 93  
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<210> 94  
<211> 23  
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<212> DNA  
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<220>  
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<210> 96  
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<213> Homo sapiens

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<210> 97  
 <211> 277  
 <212> PRT  
 <213> Homo sapiens

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 Asp Ser Arg Pro Thr Ala Glu Val Cys Ala Thr His Thr Ile Ser  
 35 40 45  
 Pro Gly Pro Lys Gly Asp Asp Gly Glu Lys Gly Asp Pro Gly Glu  
 50 55 60  
 Glu Gly Lys His Gly Lys Val Gly Arg Met Gly Pro Lys Gly Ile  
 65 70 75  
 Lys Gly Glu Leu Gly Asp Met Gly Asp Gln Gly Asn Ile Gly Lys



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| 80  |     |     |     |     |     |     |     |     |     | 85  |     |     |     |     | 90 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Thr | Gly | Pro | Ile | Gly | Lys | Lys | Gly | Asp | Lys | Gly | Glu | Lys | Gly | Leu |    |  |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |    |  |  |  |  |
| Leu | Gly | Ile | Pro | Gly | Glu | Lys | Gly | Lys | Ala | Gly | Thr | Val | Cys | Asp |    |  |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |    |  |  |  |  |
| Cys | Gly | Arg | Tyr | Arg | Lys | Phe | Val | Gly | Gln | Leu | Asp | Ile | Ser | Ile |    |  |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |    |  |  |  |  |
| Ala | Arg | Leu | Lys | Thr | Ser | Met | Lys | Phe | Val | Lys | Asn | Val | Ile | Ala |    |  |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |    |  |  |  |  |
| Gly | Ile | Arg | Glu | Thr | Glu | Glu | Lys | Phe | Tyr | Tyr | Ile | Val | Gln | Glu |    |  |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |    |  |  |  |  |
| Glu | Lys | Asn | Tyr | Arg | Glu | Ser | Leu | Thr | His | Cys | Arg | Ile | Arg | Gly |    |  |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |    |  |  |  |  |
| Gly | Met | Leu | Ala | Met | Pro | Lys | Asp | Glu | Ala | Ala | Asn | Thr | Leu | Ile |    |  |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |    |  |  |  |  |
| Ala | Asp | Tyr | Val | Ala | Lys | Ser | Gly | Phe | Phe | Arg | Val | Phe | Ile | Gly |    |  |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |    |  |  |  |  |
| Val | Asn | Asp | Leu | Glu | Arg | Glu | Gly | Gln | Tyr | Met | Ser | Thr | Asp | Asn |    |  |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |    |  |  |  |  |
| Thr | Pro | Leu | Gln | Asn | Tyr | Ser | Asn | Trp | Asn | Glu | Gly | Glu | Pro | Ser |    |  |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |    |  |  |  |  |
| Asp | Pro | Tyr | Gly | His | Glu | Asp | Cys | Val | Glu | Met | Leu | Ser | Ser | Gly |    |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |    |  |  |  |  |
| Arg | Trp | Asn | Asp | Thr | Glu | Cys | His | Leu | Thr | Met | Tyr | Phe | Val | Cys |    |  |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |    |  |  |  |  |
| Glu | Phe | Ile | Lys | Lys | Lys | Lys |     |     |     |     |     |     |     |     |    |  |  |  |  |
|     |     |     |     | 275 |     |     |     |     |     |     |     |     |     |     |    |  |  |  |  |

<210> 98  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Synthetic oligonucleotide probe  
  
 <400> 98  
 cgctgactat gttgccaaga gtgg 24  
  
 <210> 99  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>

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<223> Synthetic oligonucleotide probe

<400> 99  
gatgatggag gctccatacc tcag 24

<210> 100  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

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<210> 101  
<211> 2574  
<212> DNA  
<213> Homo sapiens

<400> 101  
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gggcctgggt ggggaatgggc gtgtgccagc gcacgcgcgc tccctggaag 150  
gagaagtctc agctagaacg agcggcccta ggttttcgga agggaggatc 200  
agggatgttt gcgagcggct ggaaccagac ggtgccgata gaggaagcgg 250  
gtccatggc tgccctcctg ctgctgcccc tgctgctgtt gctaccgctg 300  
ctgctgctga agctacacct ctggccgcag ttgcgctggc ttccggcgga 350  
cttggccttt gcggtgcgag ctctgtgctg caaaagggt cttcgagctc 400  
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agcctggcct ggcgctcgc ggaactggcc cagcagcgcg ccgcgcacac 500  
ctttctcatt cacggctcgc ggcgcttttag ctactcagag gcggagcgcg 550  
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ggcagcgccg ggagccggag atgcagcggc cggaagcggc gcggagtgtg 700  
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cgcgcgctgg tgctggcgcc agagtttctg gagtccctgg agccggacct 950  
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 ggtggaaggg ggagaatgtg gccacaaccg aggtggcaga ggtcttcgag 1950  
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 gcatgaaggc agggctggaa tggcagccct agttctgcgt cccccccacg 2050  
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 tatgcccggc ccgattcct caggctccag gagtctttgg ccaccacaga 2150  
 gaccttcaaa cagcagaaag ttcggatggc aaatgagggc ttcgacccca 2200  
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 aatctgagaa cttccacacc tgaggcacct gagagaggaa ctctgtgggg 2350

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 aactgcggtc actatatttgt aataaatgtg gctggagctg atccagctgt 2450  
 ctctgaccta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaag ggcggccgcg 2500  
 actctagagt cgacctgcag tagggataac agggtaataa gcttggccgc 2550  
 catggcccaa cttgtttatt gcag 2574

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 <211> 730  
 <212> PRT  
 <213> Homo sapiens

<400> 102  
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 20 25 30  
 Met Phe Ala Ser Gly Trp Asn Gln Thr Val Pro Ile Glu Glu Ala  
 35 40 45  
 Gly Ser Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu  
 50 55 60  
 Pro Leu Leu Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp  
 65 70 75  
 Leu Pro Ala Asp Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys  
 80 85 90  
 Arg Ala Leu Arg Ala Arg Ala Leu Ala Ala Ala Ala Asp Pro  
 95 100 105  
 Glu Gly Pro Glu Gly Gly Cys Ser Leu Ala Trp Arg Leu Ala Glu  
 110 115 120  
 Leu Ala Gln Gln Arg Ala Ala His Thr Phe Leu Ile His Gly Ser  
 125 130 135  
 Arg Arg Phe Ser Tyr Ser Glu Ala Glu Arg Glu Ser Asn Arg Ala  
 140 145 150  
 Ala Arg Ala Phe Leu Arg Ala Leu Gly Trp Asp Trp Gly Pro Asp  
 155 160 165  
 Gly Gly Asp Ser Gly Glu Gly Ser Ala Gly Glu Gly Glu Arg Ala  
 170 175 180  
 Ala Pro Gly Ala Gly Asp Ala Ala Ala Gly Ser Gly Ala Glu Phe  
 185 190 195  
 Ala Gly Gly Asp Gly Ala Ala Arg Gly Gly Gly Ala Ala Ala Pro  
 200 205 210

09978299 "10501"

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|                 |                     |                     |     |
|-----------------|---------------------|---------------------|-----|
| Leu Ser Pro Gly | Ala Thr Val Ala Leu | Leu Leu Pro Ala Gly | Pro |
| 215             |                     | 220                 | 225 |
| Glu Phe Leu Trp | Leu Trp Phe Gly Leu | Ala Lys Ala Gly Leu | Arg |
| 230             |                     | 235                 | 240 |
| Thr Ala Phe Val | Pro Thr Ala Leu Arg | Arg Gly Pro Leu Leu | His |
| 245             |                     | 250                 | 255 |
| Cys Leu Arg Ser | Cys Gly Ala Arg Ala | Leu Val Leu Ala Pro | Glu |
| 260             |                     | 265                 | 270 |
| Phe Leu Glu Ser | Leu Glu Pro Asp Leu | Pro Ala Leu Arg Ala | Met |
| 275             |                     | 280                 | 285 |
| Gly Leu His Leu | Trp Ala Ala Gly Pro | Gly Thr His Pro Ala | Gly |
| 290             |                     | 295                 | 300 |
| Ile Ser Asp Leu | Leu Ala Glu Val Ser | Ala Glu Val Asp Gly | Pro |
| 305             |                     | 310                 | 315 |
| Val Pro Gly Tyr | Leu Ser Ser Pro Gln | Ser Ile Thr Asp Thr | Cys |
| 320             |                     | 325                 | 330 |
| Leu Tyr Ile Phe | Thr Ser Gly Thr Thr | Gly Leu Pro Lys Ala | Ala |
| 335             |                     | 340                 | 345 |
| Arg Ile Ser His | Leu Lys Ile Leu Gln | Cys Gln Gly Phe Tyr | Gln |
| 350             |                     | 355                 | 360 |
| Leu Cys Gly Val | His Gln Glu Asp Val | Ile Tyr Leu Ala Leu | Pro |
| 365             |                     | 370                 | 375 |
| Leu Tyr His Met | Ser Gly Ser Leu Leu | Gly Ile Val Gly Cys | Met |
| 380             |                     | 385                 | 390 |
| Gly Ile Gly Ala | Thr Val Val Leu Lys | Ser Lys Phe Ser Ala | Gly |
| 395             |                     | 400                 | 405 |
| Gln Phe Trp Glu | Asp Cys Gln Gln His | Arg Val Thr Val Phe | Gln |
| 410             |                     | 415                 | 420 |
| Tyr Ile Gly Glu | Leu Cys Arg Tyr Leu | Val Asn Gln Pro Pro | Ser |
| 425             |                     | 430                 | 435 |
| Lys Ala Glu Arg | Gly His Lys Val Arg | Leu Ala Val Gly Ser | Gly |
| 440             |                     | 445                 | 450 |
| Leu Arg Pro Asp | Thr Trp Glu Arg Phe | Val Arg Arg Phe Gly | Pro |
| 455             |                     | 460                 | 465 |
| Leu Gln Val Leu | Glu Thr Tyr Gly Leu | Thr Glu Gly Asn Val | Ala |
| 470             |                     | 475                 | 480 |
| Thr Ile Asn Tyr | Thr Gly Gln Arg Gly | Ala Val Gly Arg Ala | Ser |
| 485             |                     | 490                 | 495 |
| Trp Leu Tyr Lys | His Ile Phe Pro Phe | Ser Leu Ile Arg Tyr | Asp |

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| 500  | 505                            | 510 |
|--|--------------------------------|-----|
| Val Thr Thr Gly Glu Pro Ile Arg Asp<br>515 | Pro Gln Gly His Cys Met<br>520 |     |
| Ala Thr Ser Pro Gly Glu Pro Gly Leu<br>530 | Leu Val Ala Pro Val Ser<br>535 |     |
| Gln Gln Ser Pro Phe Leu Gly Tyr Ala<br>545 | Gly Gly Pro Glu Leu Ala<br>550 |     |
| Gln Gly Lys Leu Leu Lys Asp Val Phe<br>560 | Arg Pro Gly Asp Val Phe<br>565 |     |
| Phe Asn Thr Gly Asp Leu Leu Val Cys<br>575 | Asp Asp Gln Gly Phe Leu<br>580 |     |
| Arg Phe His Asp Arg Thr Gly Asp Thr<br>590 | Phe Arg Trp Lys Gly Glu<br>595 |     |
| Asn Val Ala Thr Thr Glu Val Ala Glu<br>605 | Val Phe Glu Ala Leu Asp<br>610 |     |
| Phe Leu Gln Glu Val Asn Val Tyr Gly<br>620 | Val Thr Val Pro Gly His<br>625 |     |
| Glu Gly Arg Ala Gly Met Ala Ala Leu<br>635 | Val Leu Arg Pro Pro His<br>640 |     |
| Ala Leu Asp Leu Met Gln Leu Tyr Thr<br>650 | His Val Ser Glu Asn Leu<br>655 |     |
| Pro Pro Tyr Ala Arg Pro Arg Phe Leu<br>665 | Arg Leu Gln Glu Ser Leu<br>670 |     |
| Ala Thr Thr Glu Thr Phe Lys Gln Gln<br>680 | Lys Val Arg Met Ala Asn<br>685 |     |
| Glu Gly Phe Asp Pro Ser Thr Leu Ser<br>695 | Asp Pro Leu Tyr Val Leu<br>700 |     |
| Asp Gln Ala Val Gly Ala Tyr Leu Pro<br>710 | Leu Thr Thr Ala Arg Tyr<br>715 |     |
| Ser Ala Leu Leu Ala Gly Asn Leu Arg<br>725 | Ile<br>730                     |     |

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 103

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<210> 104  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 104  
ggagaatgtg gccacaac 18

<210> 105  
<211> 26  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 105  
gccctggcac agtgactcca tagacg 26

<210> 106  
<211> 18  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 106  
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<210> 107  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 107  
ccagtgccag gatacctctc ttccccccag agcataacag acacg 45

<210> 108  
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<212> DNA  
<213> Homo sapiens

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acgcgcgcat acacactcgc tctcgtttgt ccctctccct cccgggggag 150  
ccggcgcgcg ctcccacctt tgccgcacac tccggcgagc cgagcccgcg 200

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accgtttcca tctgggggct agaggagcaa ggcagcagcc ttcccagcca 350  
gcccttggtg gcttgccatc gtccatctgg cttataaaaag tttgctgagc 400  
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cgtgccctca tgaagatgct gtactgccc tactgtcggg ggcttccac 1350  
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acagcatgca ggtgtctgca aaggcttttc agggatgtgg tcagcccaaa 1600  
cctgctccag cctcagatc tgcccgtca gctcctgaaa attttaatac 1650



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 aaaaaggtct ggtcagcatt accctacact atctgcaagg acgagagcgt 1800  
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 ccagatactt gcctgagatc atgaatgatg ggctcaccaa ccagatcaac 1900  
 aatccccgagg tggatgtgga catcactcgg cctgacactt tcatcagaca 1950  
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 ttgtttattc tagagagaat tcttactcaa atttttcgta ccaggagatt 2500  
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<210> 109  
 <211> 555  
 <212> PRT  
 <213> Homo sapiens

<400> 109  
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 Leu Leu Ser Leu Pro Ala Gly Ala Asp Val Lys Ala Arg Ser Cys  
                   20                  25                  30  
 Gly Glu Val Arg Gln Ala Tyr Gly Ala Lys Gly Phe Ser Leu Ala  
                   35                  40                  45  
 Asp Ile Pro Tyr Gln Glu Ile Ala Gly Glu His Leu Arg Ile Cys  
                   50                  55                  60  
 Pro Gln Glu Tyr Thr Cys Cys Thr Thr Glu Met Glu Asp Lys Leu  
                   65                  70                  75

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr | 80  | 85  | 90  |
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe | 95  | 100 | 105 |
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu | 110 | 115 | 120 |
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn | 125 | 130 | 135 |
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr | 140 | 145 | 150 |
| Thr | Gly | Gly | Asn | Val | Asn | Leu | Glu | Glu | Met | Leu | Asn | Asp | Phe | Trp | 155 | 160 | 165 |
| Ala | Arg | Leu | Leu | Glu | Arg | Met | Phe | Gln | Leu | Ile | Asn | Pro | Gln | Tyr | 170 | 175 | 180 |
| His | Phe | Ser | Glu | Asp | Tyr | Leu | Glu | Cys | Val | Ser | Lys | Tyr | Thr | Asp | 185 | 190 | 195 |
| Gln | Leu | Lys | Pro | Phe | Gly | Asp | Val | Pro | Arg | Lys | Leu | Lys | Ile | Gln | 200 | 205 | 210 |
| Val | Thr | Arg | Ala | Phe | Ile | Ala | Ala | Arg | Thr | Phe | Val | Gln | Gly | Leu | 215 | 220 | 225 |
| Thr | Val | Gly | Arg | Glu | Val | Ala | Asn | Arg | Val | Ser | Lys | Val | Ser | Pro | 230 | 235 | 240 |
| Thr | Pro | Gly | Cys | Ile | Arg | Ala | Leu | Met | Lys | Met | Leu | Tyr | Cys | Pro | 245 | 250 | 255 |
| Tyr | Cys | Arg | Gly | Leu | Pro | Thr | Val | Arg | Pro | Cys | Asn | Asn | Tyr | Cys | 260 | 265 | 270 |
| Leu | Asn | Val | Met | Lys | Gly | Cys | Leu | Ala | Asn | Gln | Ala | Asp | Leu | Asp | 275 | 280 | 285 |
| Thr | Glu | Trp | Asn | Leu | Phe | Ile | Asp | Ala | Met | Leu | Leu | Val | Ala | Glu | 290 | 295 | 300 |
| Arg | Leu | Glu | Gly | Pro | Phe | Asn | Ile | Glu | Ser | Val | Met | Asp | Pro | Ile | 305 | 310 | 315 |
| Asp | Val | Lys | Ile | Ser | Glu | Ala | Ile | Met | Asn | Met | Gln | Glu | Asn | Ser | 320 | 325 | 330 |
| Met | Gln | Val | Ser | Ala | Lys | Val | Phe | Gln | Gly | Cys | Gly | Gln | Pro | Lys | 335 | 340 | 345 |
| Pro | Ala | Pro | Ala | Leu | Arg | Ser | Ala | Arg | Ser | Ala | Pro | Glu | Asn | Phe | 350 | 355 | 360 |
| Asn | Thr | Arg | Phe | Arg | Pro | Tyr | Asn | Pro | Glu | Glu | Arg | Pro | Thr | Thr |     |     |     |

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| 365  | 370 | 375 |
|--|-----|-----|
| Ala Ala Gly Thr Ser Leu Asp Arg Leu Val Thr Asp Ile Lys Glu<br>380 385 390 |     |     |
| Lys Leu Lys Leu Ser Lys Lys Val Trp Ser Ala Leu Pro Tyr Thr<br>395 400 405 |     |     |
| Ile Cys Lys Asp Glu Ser Val Thr Ala Gly Thr Ser Asn Glu Glu<br>410 415 420 |     |     |
| Glu Cys Trp Asn Gly His Ser Lys Ala Arg Tyr Leu Pro Glu Ile<br>425 430 435 |     |     |
| Met Asn Asp Gly Leu Thr Asn Gln Ile Asn Asn Pro Glu Val Asp<br>440 445 450 |     |     |
| Val Asp Ile Thr Arg Pro Asp Thr Phe Ile Arg Gln Gln Ile Met<br>455 460 465 |     |     |
| Ala Leu Arg Val Met Thr Asn Lys Leu Lys Asn Ala Tyr Asn Gly<br>470 475 480 |     |     |
| Asn Asp Val Asn Phe Gln Asp Thr Ser Asp Glu Ser Ser Gly Ser<br>485 490 495 |     |     |
| Gly Ser Gly Ser Gly Cys Met Asp Asp Val Cys Pro Thr Glu Phe<br>500 505 510 |     |     |
| Glu Phe Val Thr Thr Glu Ala Pro Ala Val Asp Pro Asp Arg Arg<br>515 520 525 |     |     |
| Glu Val Asp Ser Ser Ala Ala Gln Arg Gly His Ser Leu Leu Ser<br>530 535 540 |     |     |
| Trp Ser Leu Thr Cys Ile Val Leu Ala Leu Gln Arg Leu Cys Arg<br>545 550 555 |     |     |

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<220>  
 <223> Synthetic oligonucleotide probe

<400> 110  
 aagcgtgaca gcgggcacgt c 21

<210> 111  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 111

tgcacagtct ctgcagtgcc cagg 24

<210> 112

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 112

gaatgctgga acgggcacag caaagccaga tacttgctg 40

<210> 113

<211> 4649

<212> DNA

<213> Homo sapiens

<400> 113

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cgccaactac gcaaagacca agcgggtccc gcgcggaccg gccgcggggc 150  
tagggaccgc gctttggcct tcaggctccc tagcagcggg gaaaaggaat 200  
tgctgcccgc agtttctgcg gaggtggagg gagatcagga aacggcttct 250  
tcctcacttc gccgcctggt gagtgtcggg gagattggca aacgcctagg 300  
aaaggactgg ggaatatagc cctgggaaag tggagaaggt gatcaggagg 350  
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tccacttcgc agttctttcc aggtgtgggg accgcaggac agacggccga 450  
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aacgtcgagg gcgctctggc cacgaaaagt tcctgtccac tgtgattctc 550  
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 <212> PRT  
 <213> Homo sapiens

<400> 114  
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 35 40 45  
 Trp Gly Gln Ala Leu Glu Glu Glu Glu Gly Ala Leu Leu Ala  
 50 55 60  
 Gln Ala Gly Glu Lys Leu Glu Pro Ser Thr Thr Ser Thr Ser Gln  
 65 70 75  
 Pro His Leu Ile Phe Ile Leu Ala Asp Asp Gln Gly Phe Arg Asp  
 80 85 90  
 Val Gly Tyr His Gly Ser Glu Ile Lys Thr Pro Thr Leu Asp Lys  
 95 100 105  
 Leu Ala Ala Glu Gly Val Lys Leu Glu Asn Tyr Tyr Val Gln Pro

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|                                     |                         |     |
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| 110                                 | 115                     | 120 |
| Ile Cys Thr Pro Ser Arg Ser Gln Phe | Ile Thr Gly Lys Tyr Gln |     |
| 125                                 | 130                     | 135 |
| Ile His Thr Gly Leu Gln His Ser Ile | Ile Arg Pro Thr Gln Pro |     |
| 140                                 | 145                     | 150 |
| Asn Cys Leu Pro Leu Asp Asn Ala Thr | Leu Pro Gln Lys Leu Lys |     |
| 155                                 | 160                     | 165 |
| Glu Val Gly Tyr Ser Thr His Met Val | Gly Lys Trp His Leu Gly |     |
| 170                                 | 175                     | 180 |
| Phe Asn Arg Lys Glu Cys Met Pro Thr | Arg Arg Gly Phe Asp Thr |     |
| 185                                 | 190                     | 195 |
| Phe Phe Gly Ser Leu Leu Gly Ser Gly | Asp Tyr Tyr Thr His Tyr |     |
| 200                                 | 205                     | 210 |
| Lys Cys Asp Ser Pro Gly Met Cys Gly | Tyr Asp Leu Tyr Glu Asn |     |
| 215                                 | 220                     | 225 |
| Asp Asn Ala Ala Trp Asp Tyr Asp Asn | Gly Ile Tyr Ser Thr Gln |     |
| 230                                 | 235                     | 240 |
| Met Tyr Thr Gln Arg Val Gln Gln Ile | Leu Ala Ser His Asn Pro |     |
| 245                                 | 250                     | 255 |
| Thr Lys Pro Ile Phe Leu Tyr Thr Ala | Tyr Gln Ala Val His Ser |     |
| 260                                 | 265                     | 270 |
| Pro Leu Gln Ala Pro Gly Arg Tyr Phe | Glu His Tyr Arg Ser Ile |     |
| 275                                 | 280                     | 285 |
| Ile Asn Ile Asn Arg Arg Arg Tyr Ala | Ala Met Leu Ser Cys Leu |     |
| 290                                 | 295                     | 300 |
| Asp Glu Ala Ile Asn Asn Val Thr Leu | Ala Leu Lys Thr Tyr Gly |     |
| 305                                 | 310                     | 315 |
| Phe Tyr Asn Asn Ser Ile Ile Ile Tyr | Ser Ser Asp Asn Gly Gly |     |
| 320                                 | 325                     | 330 |
| Gln Pro Thr Ala Gly Gly Ser Asn Trp | Pro Leu Arg Gly Ser Lys |     |
| 335                                 | 340                     | 345 |
| Gly Thr Tyr Trp Glu Gly Gly Ile Arg | Ala Val Gly Phe Val His |     |
| 350                                 | 355                     | 360 |
| Ser Pro Leu Leu Lys Asn Lys Gly Thr | Val Cys Lys Glu Leu Val |     |
| 365                                 | 370                     | 375 |
| His Ile Thr Asp Trp Tyr Pro Thr Leu | Ile Ser Leu Ala Glu Gly |     |
| 380                                 | 385                     | 390 |
| Gln Ile Asp Glu Asp Ile Gln Leu Asp | Gly Tyr Asp Ile Trp Glu |     |
| 395                                 | 400                     | 405 |



Thr Ile Ser Glu Gly Leu Arg Ser Pro Arg Val Asp Ile Leu His  
 410 415 420  
 Asn Ile Asp Pro Tyr Thr Pro Arg Gln Lys Met Ala Pro Gly Gln  
 425 430 435  
 Gln Ala Met Gly Ser Gly Thr Leu Gln Ser Ser Gln Pro Ser Glu  
 440 445 450  
 Cys Ser Thr Gly Asn Cys Leu Gln Glu Ile Leu Ala Thr Ala Thr  
 455 460 465  
 Gly Ser Pro Leu Ser Leu Ser Ala Thr Trp Asp Arg Thr Gly Gly  
 470 475 480  
 Thr Met Asn Gly Ser Pro Cys Gln Leu Ala Lys Val Tyr Gly Phe  
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 Gly Ile Gln Glu Ser  
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<223> unknown base

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<212> PRT  
<213> Homo sapiens

<400> 119  
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Ala | Gly | Gly | Phe | Gly | Asn | Ala | Ala | Ser | Ala | Arg | His | His | Gly |  | 20  | 25  | 30  |
| Leu | Leu | Ala | Ser | Ala | Arg | Gln | Pro | Gly | Val | Cys | His | Tyr | Gly | Thr |  | 35  | 40  | 45  |
| Lys | Leu | Ala | Cys | Cys | Tyr | Gly | Trp | Arg | Arg | Asn | Ser | Lys | Gly | Val |  | 50  | 55  | 60  |
| Cys | Glu | Ala | Thr | Cys | Glu | Pro | Gly | Cys | Lys | Phe | Gly | Glu | Cys | Val |  | 65  | 70  | 75  |
| Gly | Pro | Asn | Lys | Cys | Arg | Cys | Phe | Pro | Gly | Tyr | Thr | Gly | Lys | Thr |  | 80  | 85  | 90  |
| Cys | Ser | Gln | Asp | Val | Asn | Glu | Cys | Gly | Met | Lys | Pro | Arg | Pro | Cys |  | 95  | 100 | 105 |
| Gln | His | Arg | Cys | Val | Asn | Thr | His | Gly | Ser | Tyr | Lys | Cys | Phe | Cys |  | 110 | 115 | 120 |
| Leu | Ser | Gly | His | Met | Leu | Met | Pro | Asp | Ala | Thr | Cys | Val | Asn | Ser |  | 125 | 130 | 135 |
| Arg | Thr | Cys | Ala | Met | Ile | Asn | Cys | Gln | Tyr | Ser | Cys | Glu | Asp | Thr |  | 140 | 145 | 150 |
| Glu | Glu | Gly | Pro | Gln | Cys | Leu | Cys | Pro | Ser | Ser | Gly | Leu | Arg | Leu |  | 155 | 160 | 165 |
| Ala | Pro | Asn | Gly | Arg | Asp | Cys | Leu | Asp | Ile | Asp | Glu | Cys | Ala | Ser |  | 170 | 175 | 180 |
| Gly | Lys | Val | Ile | Cys | Pro | Tyr | Asn | Arg | Arg | Cys | Val | Asn | Thr | Phe |  | 185 | 190 | 195 |
| Gly | Ser | Tyr | Tyr | Cys | Lys | Cys | His | Ile | Gly | Phe | Glu | Leu | Gln | Tyr |  | 200 | 205 | 210 |
| Ile | Ser | Gly | Arg | Tyr | Asp | Cys | Ile | Asp | Ile | Asn | Glu | Cys | Thr | Met |  | 215 | 220 | 225 |
| Asp | Ser | His | Thr | Cys | Ser | His | His | Ala | Asn | Cys | Phe | Asn | Thr | Gln |  | 230 | 235 | 240 |
| Gly | Ser | Phe | Lys | Cys | Lys | Cys | Lys | Gln | Gly | Tyr | Lys | Gly | Asn | Gly |  | 245 | 250 | 255 |
| Leu | Arg | Cys | Ser | Ala | Ile | Pro | Glu | Asn | Ser | Val | Lys | Glu | Val | Leu |  | 260 | 265 | 270 |
| Arg | Ala | Pro | Gly | Thr | Ile | Lys | Asp | Arg | Ile | Lys | Lys | Leu | Leu | Ala |  | 275 | 280 | 285 |
| His | Lys | Asn | Ser | Met | Lys | Lys | Lys | Ala | Lys | Ile | Lys | Asn | Val | Thr |  | 290 | 295 | 300 |
| Pro | Glu | Pro | Thr | Arg | Thr | Pro | Thr | Pro | Lys | Val | Asn | Leu | Gln | Pro |  |     |     |     |

305

310

315

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Gly Lys Lys Gly Asn Glu Glu Lys  
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&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic oligonucleotide probe

&lt;400&gt; 120

cctcagtggc cacatgctca tg 22

&lt;210&gt; 121

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic oligonucleotide probe

&lt;400&gt; 121

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&lt;210&gt; 122

&lt;211&gt; 50

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic oligonucleotide probe

&lt;400&gt; 122

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&lt;210&gt; 123

&lt;211&gt; 1199

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 123

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<210> 124  
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 <212> PRT  
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<400> 124  
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 35 40 45  
 Glu Asn Gly Asn Leu Lys Glu Lys Asp Ile Leu Val Leu Pro Leu  
 50 55 60  
 Asp Leu Thr Asp Thr Gly Ser His Glu Ala Ala Thr Lys Ala Val  
 65 70 75  
 Leu Gln Glu Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Gly Gly

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr |    |  |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |    |  |  |  |  |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr |    |  |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |    |  |  |  |  |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile |    |  |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |    |  |  |  |  |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser |    |  |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |    |  |  |  |  |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn |    |  |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |    |  |  |  |  |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser |    |  |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |    |  |  |  |  |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser |    |  |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |    |  |  |  |  |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln |    |  |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |    |  |  |  |  |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile |    |  |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |    |  |  |  |  |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro |    |  |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |    |  |  |  |  |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala |    |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |    |  |  |  |  |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe |    |  |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |    |  |  |  |  |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys |    |  |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |    |  |  |  |  |
| Thr | Lys | His | Asp |     |     |     |     |     |     |     |     |     |     |     |    |  |  |  |  |

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<210> 130

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<212> DNA

<213> Homo sapiens

<400> 131

09978299-101504



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tcctgtgtgt ctctcgctgg ttctgtctac ctggcctgga tcctgttctt 250  
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 ggacactccc acaccaact ctgctaccaa gcaggcgtct cagctttcct 2250  
 cctcctttac tctttcagat acaatcacgc cagccacgtt gttttgaaaa 2300  
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 Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe  
 35 40 45  
 Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn  
 50 55 60  
 Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln  
 65 70 75

09978299-101501

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | His | Ile | Cys | Ser | Gly | Ser | Leu | Val | Ala | Asp | Thr | Trp | Val | 80  | 85  | 90  |
| Leu | Thr | Ala | Ala | His | Cys | Phe | Glu | Lys | Ala | Ala | Ala | Thr | Glu | Leu | 95  | 100 | 105 |
| Asn | Ser | Trp | Ser | Val | Val | Leu | Gly | Ser | Leu | Gln | Arg | Glu | Gly | Leu | 110 | 115 | 120 |
| Ser | Pro | Gly | Ala | Glu | Glu | Val | Gly | Val | Ala | Ala | Leu | Gln | Leu | Pro | 125 | 130 | 135 |
| Arg | Ala | Tyr | Asn | His | Tyr | Ser | Gln | Gly | Ser | Asp | Leu | Ala | Leu | Leu | 140 | 145 | 150 |
| Gln | Leu | Ala | His | Pro | Thr | Thr | His | Thr | Pro | Leu | Cys | Leu | Pro | Gln | 155 | 160 | 165 |
| Pro | Ala | His | Arg | Phe | Pro | Phe | Gly | Ala | Ser | Cys | Trp | Ala | Thr | Gly | 170 | 175 | 180 |
| Trp | Asp | Gln | Asp | Thr | Ser | Asp | Ala | Pro | Gly | Thr | Leu | Arg | Asn | Leu | 185 | 190 | 195 |
| Arg | Leu | Arg | Leu | Ile | Ser | Arg | Pro | Thr | Cys | Asn | Cys | Ile | Tyr | Asn | 200 | 205 | 210 |
| Gln | Leu | His | Gln | Arg | His | Leu | Ser | Asn | Pro | Ala | Arg | Pro | Gly | Met | 215 | 220 | 225 |
| Leu | Cys | Gly | Gly | Pro | Gln | Pro | Gly | Val | Gln | Gly | Pro | Cys | Gln | Gly | 230 | 235 | 240 |
| Asp | Ser | Gly | Gly | Pro | Val | Leu | Cys | Leu | Glu | Pro | Asp | Gly | His | Trp | 245 | 250 | 255 |
| Val | Gln | Ala | Gly | Ile | Ile | Ser | Phe | Ala | Ser | Ser | Cys | Ala | Gln | Glu | 260 | 265 | 270 |
| Asp | Ala | Pro | Val | Leu | Leu | Thr | Asn | Thr | Ala | Ala | His | Ser | Ser | Trp | 275 | 280 | 285 |
| Leu | Gln | Ala | Arg | Val | Gln | Gly | Ala | Ala | Phe | Leu | Ala | Gln | Ser | Pro | 290 | 295 | 300 |
| Glu | Thr | Pro | Glu | Met | Ser | Asp | Glu | Asp | Ser | Cys | Val | Ala | Cys | Gly | 305 | 310 | 315 |
| Ser | Leu | Arg | Thr | Ala | Gly | Pro | Gln | Ala | Gly | Ala | Pro | Ser | Pro | Trp | 320 | 325 | 330 |
| Pro | Trp | Glu | Ala | Arg | Leu | Met | His | Gln | Gly | Gln | Leu | Ala | Cys | Gly | 335 | 340 | 345 |
| Gly | Ala | Leu | Val | Ser | Glu | Glu | Ala | Val | Leu | Thr | Ala | Ala | His | Cys | 350 | 355 | 360 |
| Phe | Ile | Gly | Arg | Gln | Ala | Pro | Glu | Glu | Trp | Ser | Val | Gly | Leu | Gly |     |     |     |

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|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| 365             | 370                 | 375                     |
| Thr Arg Pro Glu | Glu Trp Gly Leu Lys | Gln Leu Ile Leu His Gly |
| 380             | 385                 | 390                     |
| Ala Tyr Thr His | Pro Glu Gly Gly Tyr | Asp Met Ala Leu Leu Leu |
| 395             | 400                 | 405                     |
| Leu Ala Gln Pro | Val Thr Leu Gly Ala | Ser Leu Arg Pro Leu Cys |
| 410             | 415                 | 420                     |
| Leu Pro Tyr Pro | Asp His His Leu Pro | Asp Gly Glu Arg Gly Trp |
| 425             | 430                 | 435                     |
| Val Leu Gly Arg | Ala Arg Pro Gly Ala | Gly Ile Ser Ser Leu Gln |
| 440             | 445                 | 450                     |
| Thr Val Pro Val | Thr Leu Leu Gly Pro | Arg Ala Cys Ser Arg Leu |
| 455             | 460                 | 465                     |
| His Ala Ala Pro | Gly Gly Asp Gly Ser | Pro Ile Leu Pro Gly Met |
| 470             | 475                 | 480                     |
| Val Cys Thr Ser | Ala Val Gly Glu Leu | Pro Ser Cys Glu Gly Leu |
| 485             | 490                 | 495                     |
| Ser Gly Ala Pro | Leu Val His Glu Val | Arg Gly Thr Trp Phe Leu |
| 500             | 505                 | 510                     |
| Ala Gly Leu His | Ser Phe Gly Asp Ala | Cys Gln Gly Pro Ala Arg |
| 515             | 520                 | 525                     |
| Pro Ala Val Phe | Thr Ala Leu Pro Ala | Tyr Glu Asp Trp Val Ser |
| 530             | 535                 | 540                     |
| Ser Leu Asp Trp | Gln Val Tyr Phe Ala | Glu Glu Pro Glu Pro Glu |
| 545             | 550                 | 555                     |
| Ala Glu Pro Gly | Ser Cys Leu Ala Asn | Ile Ser Gln Pro Thr Ser |
| 560             | 565                 | 570                     |
| Cys             |                     |                         |

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

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<210> 135

<211> 45

<212> DNA

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<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

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ggggcagcct tccaccacgg ggagcccagc tgtcagccgc ctacacaggaa 150

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cctgaagacc cagtgggtggc actgggtgggc accgatgcca ccctgtgctg 300

ctccttctcc cctgagcctg gcttcagcct ggcacagctc aacctcatct 350

ggcagctgac agataccaaa cagctgggtgc acagctttgc tgagggccag 400

gaccagggca ggcctatgc caaccgcacg gccctcttcc cggacctgct 450

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agggcagctt cacctgcttc gtgagcatcc gggatttcgg cagcgtgcc 550

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gccaacaag gacctgcggc caggggacac ggtgaccatc acgtgctcca 650

gctaccaggg ctaccctgag gctgaggtgt tctggcagga tgggcagggt 700

gtgcccctga ctggcaacgt gaccacgtcg cagatggcca acgagcaggg 750

cttgtttgat gtgcacagcg tcctgcgggt ggtgctgggt gcgaatggca 800

cctacagctg cctggtgcgc aaccccgtgc tgacgcagga tgcgacargc 850

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09976399-101501

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attttgggga aaataaatgt ctttgtaaaa aaaaaaaaaa aaaaaaaaaa 1998

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<213> Homo sapiens

<220>  
<221> unsure  
<222> 233  
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09570209-101501

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|                 | 20                  | 25                  | 30  |
| Val Gln Val Pro | Glu Asp Pro Val Val | Ala Leu Val Gly Thr | Asp |
|                 | 35                  | 40                  | 45  |
| Ala Thr Leu Cys | Cys Ser Phe Ser Pro | Glu Pro Gly Phe Ser | Leu |
|                 | 50                  | 55                  | 60  |
| Ala Gln Leu Asn | Leu Ile Trp Gln Leu | Thr Asp Thr Lys Gln | Leu |
|                 | 65                  | 70                  | 75  |
| Val His Ser Phe | Ala Glu Gly Gln Asp | Gln Gly Ser Ala Tyr | Ala |
|                 | 80                  | 85                  | 90  |
| Asn Arg Thr Ala | Leu Phe Pro Asp Leu | Leu Ala Gln Gly Asn | Ala |
|                 | 95                  | 100                 | 105 |
| Ser Leu Arg Leu | Gln Arg Val Arg Val | Ala Asp Glu Gly Ser | Phe |
|                 | 110                 | 115                 | 120 |
| Thr Cys Phe Val | Ser Ile Arg Asp Phe | Gly Ser Ala Ala Val | Ser |
|                 | 125                 | 130                 | 135 |
| Leu Gln Val Ala | Ala Pro Tyr Ser Lys | Pro Ser Met Thr Leu | Glu |
|                 | 140                 | 145                 | 150 |
| Pro Asn Lys Asp | Leu Arg Pro Gly Asp | Thr Val Thr Ile Thr | Cys |
|                 | 155                 | 160                 | 165 |
| Ser Ser Tyr Gln | Gly Tyr Pro Glu Ala | Glu Val Phe Trp Gln | Asp |
|                 | 170                 | 175                 | 180 |
| Gly Gln Gly Val | Pro Leu Thr Gly Asn | Val Thr Thr Ser Gln | Met |
|                 | 185                 | 190                 | 195 |
| Ala Asn Glu Gln | Gly Leu Phe Asp Val | His Ser Val Leu Arg | Val |
|                 | 200                 | 205                 | 210 |
| Val Leu Gly Ala | Asn Gly Thr Tyr Ser | Cys Leu Val Arg Asn | Pro |
|                 | 215                 | 220                 | 225 |
| Val Leu Gln Gln | Asp Ala His Xaa Ser | Val Thr Ile Thr Gly | Gln |
|                 | 230                 | 235                 | 240 |
| Pro Met Thr Phe | Pro Pro Glu Ala Leu | Trp Val Thr Val Gly | Leu |
|                 | 245                 | 250                 | 255 |
| Ser Val Cys Leu | Ile Ala Leu Leu Val | Ala Leu Ala Phe Val | Cys |
|                 | 260                 | 265                 | 270 |
| Trp Arg Lys Ile | Lys Gln Ser Cys Glu | Glu Glu Asn Ala Gly | Ala |
|                 | 275                 | 280                 | 285 |
| Glu Asp Gln Asp | Gly Glu Gly Glu Gly | Ser Lys Thr Ala Leu | Gln |
|                 | 290                 | 295                 | 300 |

Pro Leu Lys His Ser Asp Ser Lys Glu Asp Asp Gly Gln Glu Ile  
 305 310 315

Ala

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 tgcgaaccag gcagctgtaa gtgc 24

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0907899  
 TDSIT 66282650



| Parameter        | Value      | Unit   |
|------------------|------------|--------|
| Temperature      | 25.0       | °C     |
| Pressure         | 1.0        | atm    |
| Flow rate        | 1.0        | L/min  |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |
| Detector         | Photodiode |        |
| Sample           | Water      |        |
| Concentration    | 1.0        | mg/L   |
| Path length      | 1.0        | cm     |
| Wavelength       | 254        | nm     |
| Scan rate        | 1.0        | nm/min |
| Integration time | 1.0        | s      |
| Resolution       | 0.5        | nm     |
| Slit width       | 1.0        | mm     |

<220>  
<223> Synthetic oligonucleotide probe

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<210> 144
<211> 2336
<212> DNA
<213> Homo sapiens
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<220>  
<221> unsure  
<222> 1620, 1673  
<223> unknown base
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101

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 cccttaggtt tctaagtacc catttctttc tgataagtta ttgggaagaa 1000  
 aaagctaatt ggtctttgaa tagaagactt ctggacaatt tttcactttc 1050  
 acagatatga agctttggtt tactttctca cttataaatt taaaatgttg 1100  
 caactgggaa tataaccacga catgagacca gggtatagca caaattagca 1150  
 ccctatattt ctgcttcctt ctattttctc caagtttagag gtcaacattt 1200  
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gcagctacta ttgaataaat acctatcctg gatttt 2336

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<211> 211  
<212> PRT  
<213> Homo sapiens

<400> 145

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Val Leu Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly  
35 40 45  
Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly  
50 55 60  
Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile  
65 70 75  
Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln  
80 85 90  
Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile  
95 100 105  
Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro  
110 115 120  
Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg  
125 130 135  
Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn  
140 145 150  
Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys  
155 160 165  
Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His  
170 175 180  
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185 190 195  
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200 205 210  
Leu

<210> 146  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 146  
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<210> 147  
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<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 147  
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<210> 148  
<211> 49  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 148  
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<210> 149  
<211> 2196  
<212> DNA  
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<400> 149  
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gccaccctca acgtcctcaa tggctctgac gcccgctgc cctgcacctt 300  
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<210> 150  
 <211> 215  
 <212> PRT  
 <213> Homo sapiens

<400> 150

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| Met | His | Arg | Asp | Ala | Trp | Leu | Pro | Arg | Pro | Ala | Phe | Ser | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Gly | Leu | Ser | Leu | Phe | Phe | Ser | Leu | Val | Pro | Pro | Gly | Arg | Ser | Met |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Glu | Val | Thr | Val | Pro | Ala | Thr | Leu | Asn | Val | Leu | Asn | Gly | Ser | Asp |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ala | Arg | Leu | Pro | Cys | Thr | Phe | Asn | Ser | Cys | Tyr | Thr | Val | Asn | His |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Lys | Gln | Phe | Ser | Leu | Asn | Trp | Thr | Tyr | Gln | Glu | Cys | Asn | Asn | Cys |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ser | Glu | Glu | Met | Phe | Leu | Gln | Phe | Arg | Met | Lys | Ile | Ile | Asn | Leu |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Lys | Leu | Glu | Arg | Phe | Gln | Asp | Arg | Val | Glu | Phe | Ser | Gly | Asn | Pro |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Ser | Lys | Tyr | Asp | Val | Ser | Val | Met | Leu | Arg | Asn | Val | Gln | Pro | Glu |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Asp | Glu | Gly | Ile | Tyr | Asn | Cys | Tyr | Ile | Met | Asn | Pro | Pro | Asp | Arg |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| His | Arg | Gly | His | Gly | Lys | Ile | His | Leu | Gln | Val | Leu | Met | Glu | Glu |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Pro | Pro | Glu | Arg | Asp | Ser | Thr | Val | Ala | Val | Ile | Val | Gly | Ala | Ser |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Val | Gly | Gly | Phe | Leu | Ala | Val | Val | Ile | Leu | Val | Leu | Met | Val | Val |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Lys | Cys | Val | Arg | Arg | Lys | Lys | Glu | Gln | Lys | Leu | Ser | Thr | Asp | Asp |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Leu | Lys | Thr | Glu | Glu | Glu | Gly | Lys | Thr | Asp | Gly | Glu | Gly | Asn | Pro |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Asp | Asp | Gly | Ala | Lys |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 215 |     |     |     |     |     |     |     |     |     |     |

<210> 151

<211> 524  
<212> DNA  
<213> Homo sapiens

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<221> unsure  
<222> 103, 233  
<223> unknown base

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ccnactaaca tctcagtctc tgaaaatgca cagagatgcc tggctacctc 150  
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ctctgaggag atgttctctc agttccgat gaagatcatt aacctgaagc 400  
tgagcggtt tcaagaccgc gtggagttct cagggaaccc cagcaagtac 450  
gatgtgtcgg tgatgctgag aaacgtgcag ccggaggatg aggggattta 500  
caactgctac atcatgaacc cccc 524

<210> 152  
<211> 368  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 56, 123  
<223> unknown base

<400> 152  
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gaggtncaca tacctgccac cctcaacgtc ctcaatggct ttgacgccg 100  
cctgccctgc accttcaact ccngctacac agtgaaccac aaacagttct 150  
ccctgaactg gatttaccag gagtgaaca actggctctg aggagatgtt 200  
cctccagttc ccgcatggaa gatcatttaa cctgaaagct ggaagcggtt 250  
ttcaagaacc gcgtggaagt ttctcagga accccagcaa gtacgatgtg 300  
tcggtgatgc tgagaaacgt gcagccggag gatgagggga tttacaactg 350  
ctacatcatg aaccccc 368

<210> 153  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 153  
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<210> 154  
 <211> 23  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 154  
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<210> 155  
 <211> 50  
 <212> DNA  
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<220>  
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<400> 155  
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<210> 156  
 <211> 2680  
 <212> DNA  
 <213> Homo sapiens

<400> 156  
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 cgcggaccca gcgctcccgg ccggacgtca cccccagtg gtgctggtcc 150  
 ctggtgattt gggtaaccaa ctggaagcca agctggacaa gccgacagt 200  
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09978299-101501

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<210> 157  
<211> 412  
<212> PRT  
<213> Artificial

<400> 157  
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Ala Leu Pro Ala Gly Arg His Pro Pro Val Val Leu Val Pro Gly  
35 40 45  
Asp Leu Gly Asn Gln Leu Glu Ala Lys Leu Asp Lys Pro Thr Val  
50 55 60  
Val His Tyr Leu Cys Ser Lys Lys Thr Glu Ser Tyr Phe Thr Ile  
65 70 75  
Trp Leu Asn Leu Glu Leu Leu Leu Pro Val Ile Ile Asp Cys Trp  
80 85 90  
Ile Asp Asn Ile Arg Leu Val Tyr Asn Lys Thr Ser Arg Ala Thr  
95 100 105  
Gln Phe Pro Asp Gly Val Asp Val Arg Val Pro Gly Phe Gly Lys

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 110                                 | 115                     | 120 |
| Thr Phe Ser Leu Glu Phe Leu Asp Pro | Ser Lys Ser Ser Val Gly |     |
| 125                                 | 130                     | 135 |
| Ser Tyr Phe His Thr Met Val Glu Ser | Leu Val Gly Trp Gly Tyr |     |
| 140                                 | 145                     | 150 |
| Thr Arg Gly Glu Asp Val Arg Gly Ala | Pro Tyr Asp Trp Arg Arg |     |
| 155                                 | 160                     | 165 |
| Ala Pro Asn Glu Asn Gly Pro Tyr Phe | Leu Ala Leu Arg Glu Met |     |
| 170                                 | 175                     | 180 |
| Ile Glu Glu Met Tyr Gln Leu Tyr Gly | Gly Pro Val Val Leu Val |     |
| 185                                 | 190                     | 195 |
| Ala His Ser Met Gly Asn Met Tyr Thr | Leu Tyr Phe Leu Gln Arg |     |
| 200                                 | 205                     | 210 |
| Gln Pro Gln Ala Trp Lys Asp Lys Tyr | Ile Arg Ala Phe Val Ser |     |
| 215                                 | 220                     | 225 |
| Leu Gly Ala Pro Trp Gly Gly Val Ala | Lys Thr Leu Arg Val Leu |     |
| 230                                 | 235                     | 240 |
| Ala Ser Gly Asp Asn Asn Arg Ile Pro | Val Ile Gly Pro Leu Lys |     |
| 245                                 | 250                     | 255 |
| Ile Arg Glu Gln Gln Arg Ser Ala Val | Ser Thr Ser Trp Leu Leu |     |
| 260                                 | 265                     | 270 |
| Pro Tyr Asn Tyr Thr Trp Ser Pro Glu | Lys Val Phe Val Gln Thr |     |
| 275                                 | 280                     | 285 |
| Pro Thr Ile Asn Tyr Thr Leu Arg Asp | Tyr Arg Lys Phe Phe Gln |     |
| 290                                 | 295                     | 300 |
| Asp Ile Gly Phe Glu Asp Gly Trp Leu | Met Arg Gln Asp Thr Glu |     |
| 305                                 | 310                     | 315 |
| Gly Leu Val Glu Ala Thr Met Pro Pro | Gly Val Gln Leu His Cys |     |
| 320                                 | 325                     | 330 |
| Leu Tyr Gly Thr Gly Val Pro Thr Pro | Asp Ser Phe Tyr Tyr Glu |     |
| 335                                 | 340                     | 345 |
| Ser Phe Pro Asp Arg Asp Pro Lys Ile | Cys Phe Gly Asp Gly Asp |     |
| 350                                 | 355                     | 360 |
| Gly Thr Val Asn Leu Lys Ser Ala Leu | Gln Cys Gln Ala Trp Gln |     |
| 365                                 | 370                     | 375 |
| Ser Arg Gln Glu His Gln Val Leu Leu | Gln Glu Leu Pro Gly Ser |     |
| 380                                 | 385                     | 390 |
| Glu His Ile Glu Met Leu Ala Asn Ala | Thr Thr Leu Ala Tyr Leu |     |
| 395                                 | 400                     | 405 |

Lys Arg Val Leu Leu Gly Pro  
410

<210> 158  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 158  
ctggggctac acacggggtg agg 23

<210> 159  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 159  
ggtgccgctg cagaaagtag agcg 24

<210> 160  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 160  
gccccaaatg aaaacgggcc ctacttcctg gccctccgcg agatg 45

<210> 161  
<211> 1512  
<212> DNA  
<213> Homo sapiens

<400> 161  
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gcggcgcttc ctgacgcagc cgcaggtggt ggcgcgcgcc gtgtgcttgg 150  
tcttcgcctt gatcgtgttc tctgcatct atggtgaggg ctacagcaat 200  
gcccacgagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250  
ctgccgctat ggcagtgcca tcggggtgct ggccttcctg gcctcggcct 300  
tcttcttggg ggtcgacgcg tatttcccc agatcagcaa cgccactgac 350  
cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400

cctgtggttt gttggtttct gcttcctcac caaccagtgg gcagtcacca 450  
 acccgaagga cgtgctggtg ggggcccact ctgtgagggc agccatcacc 500  
 ttcagcttct tttccatctt ctctgggggt gtgctggcct ccctggccta 550  
 ccagcgctac aaggctggcg tggacgactt catccagaat tacgttgacc 600  
 ccaactccga ccccaacact gcctacgcct cctaccaggg tgcattctgtg 650  
 gacaactacc aacagccacc cttcaccag aacgcggaga ccaccgaggg 700  
 ctaccagccg cccctgtgt actgagtggc ggtagcgtg ggaaggggga 750  
 cagagagggc cctcccctct gccctggact ttccatcag cctcctggaa 800  
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 ctaaggagcc tcatagcctg gcgggggctg gcagagccac accccaagtg 900  
 cctgtgccca gagggcttca gtcagccgct cactcctcca gggcactttt 950  
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 ccaactgctgt atgatctggg ggccaccacc ctgtgccggt ggcctctggg 1250  
 ctgcctcccg tgggtgtgagg gcggggctgg tgctcatggc acttcctcct 1300  
 tgctcccacc cctggcagca gggaagggct ttgcctgaca acaccagct 1350  
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 gtgccccatg gctccagac tctgtctgtg ccgagtgtat tataaaatcg 1450  
 tgggggagat gcccggcctg ggatgctgtt tggagacgga ataatgttt 1500  
 tctcattcaa ag 1512

<210> 162  
 <211> 224  
 <212> PRT  
 <213> Homo sapiens

<400> 162  
 Met Glu Ser Gly Ala Tyr Gly Ala Ala Lys Ala Gly Gly Ser Phe  
 1 5 10 15  
 Asp Leu Arg Arg Phe Leu Thr Gln Pro Gln Val Val Ala Arg Ala  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Phe | Ser | Phe | Phe | Ser | Ile | Phe | Ser | Trp | Gly | Val | Leu | Ala | Ser | Leu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Ala | Tyr | Gln | Arg | Tyr | Lys | Ala | Gly | Val | Asp | Asp | Phe | Ile | Gln | Asn |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Tyr | Val | Asp | Pro | Thr | Pro | Asp | Pro | Asn | Thr | Ala | Tyr | Ala | Ser | Tyr |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Pro | Gly | Ala | Ser | Val | Asp | Asn | Tyr | Gln | Gln | Pro | Pro | Phe | Thr | Gln |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Asn | Ala | Glu | Thr | Thr | Glu | Gly | Tyr | Gln | Pro | Pro | Pro | Val | Tyr |     |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |

<210> 163

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 163

tggtcttcgc cttgatcgtg ttct 24

<210> 164

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 164  
gtgtactgag cggcggtag 20

<210> 165  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 165  
ctgaaggtga tggctgccct cac 23

<210> 166  
<211> 23  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 166  
ccaggaggct catgggaaag tcc 23

<210> 167  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 167  
ccacgagtct aagcagatgt actgcgtggt caaccgcaac gaggatgcct 50

<210> 168  
<211> 3143  
<212> DNA  
<213> Homo sapiens

<400> 168  
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ctggcgggca gggggacgga ggtgatggcg aggaagcgga gccagagggg 150  
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cctggtgccc ctgtttgtgc tgctggccct gctcgtgctg gcttcggcgg 250  
gggtgctact ctggtatttc ctagggtaca aggcggaggt gatggtcagc 300  
caggtgtact caggcagtct gcgtgtactc aatcgccact tctcccagga 350  
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agaagatgct caaggagctc atcaccagca cccgcctggg aacttactac 450  
aactccagct ccgtctattc ctttggggag ggacccctca cctgcttctt 500  
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gagagaaact gcgtttgcag agccacattc cagtgcaaag aggacagcac 1550  
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ttccagtgtg aggaccggag ctgcgtgaag aagcccaacc cgcagtgtga 1700  
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ggtgagtggc catggcaggc cagcctccag gttcggggtc gacacatctg 1850



tggggggggcc ctcatcgctg accgctgggt gataacagct gccactgct 1900  
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aaggtgtggc agaactcgcg ctggcctgga gaggtgtcct tcaaggtgag 2000  
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ggttctacat cccgaggagt gtctgagggt cgccccactc tgtacagagg 2850  
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cctcagagcc ctggagactg ccaggtgggc ctgctgccac tgtaagccaa 3000  
aaggtgggga agtcctgact ccaggtgctt tgcccacccc ctgcctgcca 3050  
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tttgaataa agctgcctga tcaaaaaaaaa aaaaaaaaaa aaa 3143

<210> 169  
<211> 802  
<212> PRT  
<213> Homo sapiens  
<400> 169

09978299-101501

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Val | Ala | Glu | Ala | Pro | Gln | Val | Ala | Gly | Gly | Gln | Gly | Asp | 1   | 5   | 10  | 15 |
| Gly | Gly | Asp | Gly | Glu | Glu | Ala | Glu | Pro | Glu | Gly | Met | Phe | Lys | Ala | 20  | 25  | 30  |    |
| Cys | Glu | Asp | Ser | Lys | Arg | Lys | Ala | Arg | Gly | Tyr | Leu | Arg | Leu | Val | 35  | 40  | 45  |    |
| Pro | Leu | Phe | Val | Leu | Leu | Ala | Leu | Leu | Val | Leu | Ala | Ser | Ala | Gly | 50  | 55  | 60  |    |
| Val | Leu | Leu | Trp | Tyr | Phe | Leu | Gly | Tyr | Lys | Ala | Glu | Val | Met | Val | 65  | 70  | 75  |    |
| Ser | Gln | Val | Tyr | Ser | Gly | Ser | Leu | Arg | Val | Leu | Asn | Arg | His | Phe | 80  | 85  | 90  |    |
| Ser | Gln | Asp | Leu | Thr | Arg | Arg | Glu | Ser | Ser | Ala | Phe | Arg | Ser | Glu | 95  | 100 | 105 |    |
| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | 110 | 115 | 120 |    |
| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | 125 | 130 | 135 |    |
| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | 140 | 145 | 150 |    |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | 155 | 160 | 165 |    |
| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | 170 | 175 | 180 |    |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | 185 | 190 | 195 |    |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | 200 | 205 | 210 |    |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | 215 | 220 | 225 |    |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | 230 | 235 | 240 |    |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | 245 | 250 | 255 |    |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | 260 | 265 | 270 |    |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | 275 | 280 | 285 |    |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala |     |     |     |    |

09978299-101504

| 290                    | 295  | 300        |
|------------------------|--|------------|
| Val Val Trp Lys<br>305 | Lys Gly Leu His Ser Tyr Tyr Asp Pro Phe<br>310 | Val<br>315 |
| Leu Ser Val Gln<br>320 | Pro Val Val Phe Gln Ala Cys Glu Val Asn<br>325 | Leu<br>330 |
| Thr Leu Asp Asn<br>335 | Arg Leu Asp Ser Gln Gly Val Leu Ser Thr<br>340 | Pro<br>345 |
| Tyr Phe Pro Ser<br>350 | Tyr Tyr Ser Pro Gln Thr His Cys Ser Trp<br>355 | His<br>360 |
| Leu Thr Val Pro<br>365 | Ser Leu Asp Tyr Gly Leu Ala Leu Trp Phe<br>370 | Asp<br>375 |
| Ala Tyr Ala Leu<br>380 | Arg Arg Gln Lys Tyr Asp Leu Pro Cys Thr<br>385 | Gln<br>390 |
| Gly Gln Trp Thr<br>395 | Ile Gln Asn Arg Arg Leu Cys Gly Leu Arg<br>400 | Ile<br>405 |
| Leu Gln Pro Tyr<br>410 | Ala Glu Arg Ile Pro Val Val Ala Thr Ala<br>415 | Gly<br>420 |
| Ile Thr Ile Asn<br>425 | Phe Thr Ser Gln Ile Ser Leu Thr Gly Pro<br>430 | Gly<br>435 |
| Val Arg Val His<br>440 | Tyr Gly Leu Tyr Asn Gln Ser Asp Pro Cys<br>445 | Pro<br>450 |
| Gly Glu Phe Leu<br>455 | Cys Ser Val Asn Gly Leu Cys Val Pro Ala<br>460 | Cys<br>465 |
| Asp Gly Val Lys<br>470 | Asp Cys Pro Asn Gly Leu Asp Glu Arg Asn<br>475 | Cys<br>480 |
| Val Cys Arg Ala<br>485 | Thr Phe Gln Cys Lys Glu Asp Ser Thr Cys<br>490 | Ile<br>495 |
| Ser Leu Pro Lys<br>500 | Val Cys Asp Gly Gln Pro Asp Cys Leu Asn<br>505 | Gly<br>510 |
| Ser Asp Glu Glu<br>515 | Gln Cys Gln Glu Gly Val Pro Cys Gly Thr<br>520 | Phe<br>525 |
| Thr Phe Gln Cys<br>530 | Glu Asp Arg Ser Cys Val Lys Lys Pro Asn<br>535 | Pro<br>540 |
| Gln Cys Asp Gly<br>545 | Arg Pro Asp Cys Arg Asp Gly Ser Asp Glu<br>550 | Glu<br>555 |
| His Cys Asp Cys<br>560 | Gly Leu Gln Gly Pro Ser Ser Arg Ile Val<br>565 | Gly<br>570 |
| Gly Ala Val Ser<br>575 | Ser Glu Gly Glu Trp Pro Trp Gln Ala Ser<br>580 | Leu<br>585 |

09978299-101501

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gln Val Arg Gly | Arg His Ile Cys Gly | Gly Ala Leu Ile Ala Asp | 590 | 595 | 600 |
| Arg Trp Val Ile | Thr Ala Ala His Cys | Phe Gln Glu Asp Ser Met | 605 | 610 | 615 |
| Ala Ser Thr Val | Leu Trp Thr Val Phe | Leu Gly Lys Val Trp Gln | 620 | 625 | 630 |
| Asn Ser Arg Trp | Pro Gly Glu Val Ser | Phe Lys Val Ser Arg Leu | 635 | 640 | 645 |
| Leu Leu His Pro | Tyr His Glu Glu Asp | Ser His Asp Tyr Asp Val | 650 | 655 | 660 |
| Ala Leu Leu Gln | Leu Asp His Pro Val | Val Arg Ser Ala Ala Val | 665 | 670 | 675 |
| Arg Pro Val Cys | Leu Pro Ala Arg Ser | His Phe Phe Glu Pro Gly | 680 | 685 | 690 |
| Leu His Cys Trp | Ile Thr Gly Trp Gly | Ala Leu Arg Glu Gly Gly | 695 | 700 | 705 |
| Pro Ile Ser Asn | Ala Leu Gln Lys Val | Asp Val Gln Leu Ile Pro | 710 | 715 | 720 |
| Gln Asp Leu Cys | Ser Glu Ala Tyr Arg | Tyr Gln Val Thr Pro Arg | 725 | 730 | 735 |
| Met Leu Cys Ala | Gly Tyr Arg Lys Gly | Lys Lys Asp Ala Cys Gln | 740 | 745 | 750 |
| Gly Asp Ser Gly | Gly Pro Leu Val Cys | Lys Ala Leu Ser Gly Arg | 755 | 760 | 765 |
| Trp Phe Leu Ala | Gly Leu Val Ser Trp | Gly Leu Gly Cys Gly Arg | 770 | 775 | 780 |
| Pro Asn Tyr Phe | Gly Val Tyr Thr Arg | Ile Thr Gly Val Ile Ser | 785 | 790 | 795 |
| Trp Ile Gln Gln | Val Val Thr         |                         | 800 |     |     |

<210> 170  
 <211> 1327  
 <212> DNA  
 <213> Homo sapiens

<400> 170  
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 atcctgcagc cctacgccga gaggatcccc gtggtggcca cggccgggat 100  
 caccatcaac ttcacctccc agatctccct caccgggccc ggtgtgcggg 150  
 tgcactatgg cttgtacaac cagtcggacc cctgccctgg agagttcctc 200

tgttctgtga atggactctg tgtccctgcc tgtgatgggg tcaaggactg 250  
 ccccaacggc ctggatgaga gaaactgcgt ttgcagagcc acattccagt 300  
 gcaaagagga cagcacatgc atctcactgc ccaaggtctg tgatgggagc 350  
 cctgattgtc tcaacggcag cgatgaagag cagtgccagg aaggggtgcc 400  
 atgtgggaca ttcaccttcc agtgtgagga ccggagctgc gtgaagaagc 450  
 ccaaccgcga gtgtgatggg cgggccgact gcagggacgg ctcgatgag 500  
 gagcactgtg actgtggcct ccagggcccc tccagccgca ttgttggtgg 550  
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 ggtcagctgg ggccctgggct gtggccggcc taactacttc ggcgtctaca 1200  
 cccgcatcac aggtgtgatc agctggatcc agcaagtggg gacctgagga 1250  
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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 171

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<213> Homo sapiens

<400> 177

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ctccagtccc ccagcccctg gccgagagaa gggctttacc ggccgggatt 150  
gctggaaaca ccaagaggtg gtttttgttt tttaaaactt ctgtttcttg 200  
ggaggggggtg tggcggggca ggatgagcaa ctccgttcct ctgctctgtt 250  
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ccagaggggac ggctggaaga taagctccac aaacccaaag ctacacagac 350  
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agcatgaagg atgctacctc tccgtcggcc acagccagcc cttagaagac 450  
tgcagtttca acatgacagc taaaaccttt ttcatcattc acggatggac 500  
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tcgggaatgt ccacttgatc ggctacagcc tcggagcgca cgtggccggg 750  
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cggacgatgc agattttgtg gatgtcctcc acacctacac gcgttccttc 900  
ggcttgagca ttggtattca gatgcctgtg ggccacattg acatctaccc 950  
caatgggggt gacttcagc caggctgtgg actcaacgat gtcttgggat 1000  
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aaaaaaaaaa 1510

<210> 178

<211> 354

<212> PRT

<213> Homo sapiens

<400> 178

Met Ser Asn Ser Val Pro Leu Leu Cys Phe Trp Ser Leu Cys Tyr  
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Cys Phe Ala Ala Gly Ser Pro Val Pro Phe Gly Pro Glu Gly Arg  
20 25 30

Leu Glu Asp Lys Leu His Lys Pro Lys Ala Thr Gln Thr Glu Val  
35 40 45

Lys Pro Ser Val Arg Phe Asn Leu Arg Thr Ser Lys Asp Pro Glu  
50 55 60

His Glu Gly Cys Tyr Leu Ser Val Gly His Ser Gln Pro Leu Glu  
65 70 75

Asp Cys Ser Phe Asn Met Thr Ala Lys Thr Phe Phe Ile Ile His  
80 85 90

Gly Trp Thr Met Ser Gly Ile Phe Glu Asn Trp Leu His Lys Leu  
95 100 105

Val Ser Ala Leu His Thr Arg Glu Lys Asp Ala Asn Val Val Val  
110 115 120

Val Asp Trp Leu Pro Leu Ala His Gln Leu Tyr Thr Asp Ala Val  
125 130 135

Asn Asn Thr Arg Val Val Gly His Ser Ile Ala Arg Met Leu Asp  
140 145 150

Trp Leu Gln Glu Lys Asp Asp Phe Ser Leu Gly Asn Val His Leu  
155 160 165

Ile Gly Tyr Ser Leu Gly Ala His Val Ala Gly Tyr Ala Gly Asn  
170 175 180

Phe Val Lys Gly Thr Val Gly Arg Ile Thr Gly Leu Asp Pro Ala  
185 190 195

Gly Pro Met Phe Glu Gly Ala Asp Ile His Lys Arg Leu Ser Pro  
200 205 210

Asp Asp Ala Asp Phe Val Asp Val Leu His Thr Tyr Thr Arg Ser  
215 220 225

Phe Gly Leu Ser Ile Gly Ile Gln Met Pro Val Gly His Ile Asp  
230 235 240

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Pro | Asn | Gly | Gly | Asp | Phe | Gln | Pro | Gly | Cys | Gly | Leu | Asn | 245 | 250 | 255 |
| Asp | Val | Leu | Gly | Ser | Ile | Ala | Tyr | Gly | Thr | Ile | Thr | Glu | Val | Val | 260 | 265 | 270 |
| Lys | Cys | Glu | His | Glu | Arg | Ala | Val | His | Leu | Phe | Val | Asp | Ser | Leu | 275 | 280 | 285 |
| Val | Asn | Gln | Asp | Lys | Pro | Ser | Phe | Ala | Phe | Gln | Cys | Thr | Asp | Ser | 290 | 295 | 300 |
| Asn | Arg | Phe | Lys | Lys | Gly | Ile | Cys | Leu | Ser | Cys | Arg | Lys | Asn | Arg | 305 | 310 | 315 |
| Cys | Asn | Ser | Ile | Gly | Tyr | Asn | Ala | Lys | Lys | Met | Arg | Asn | Lys | Arg | 320 | 325 | 330 |
| Asn | Ser | Lys | Met | Tyr | Leu | Lys | Thr | Arg | Ala | Gly | Met | Pro | Phe | Arg | 335 | 340 | 345 |
| Gly | Asn | Leu | Gln | Ser | Leu | Glu | Cys | Pro |     |     |     |     |     |     | 350 |     |     |

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 <211> 23  
 <212> DNA  
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<210> 181  
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<400> 181  
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<210> 182

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<212> DNA

<213> Homo sapiens

<400> 182

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acgcgctgga ggagtggagc agcaccgggc cggccctggg ggctgacagt 150  
cggcaaagtt tggcccgaag aggaagtggg ctcaaaccgc ggcaggtggc 200  
gaccaggcca gaccaggggc gctcgcctgc tgcggggcgg ctgtaggcga 250  
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ccacagaagc tccgggaccc ttccggcacc tctggacagc ccaggatgct 550  
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<210> 183  
 <211> 713  
 <212> PRT  
 <213> Homo sapiens

<400> 183

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Ala | Thr | Leu | Leu | Leu | Leu | Leu | Gly | Gly | Ala | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |
| Ala | His | Pro | Asp | Arg | Ile | Ile | Phe | Pro | Asn | His | Ala | Cys | Glu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |
| Pro | Pro | Ala | Val | Leu | Leu | Glu | Val | Gln | Gly | Thr | Leu | Gln | Arg |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |
| Leu | Val | Arg | Asp | Ser | Arg | Thr | Ser | Pro | Ala | Asn | Cys | Thr | Trp |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     | 60  |
| Ile | Leu | Gly | Ser | Lys | Glu | Gln | Thr | Val | Thr | Ile | Arg | Phe | Gln |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     | 75  |
| Leu | His | Leu | Ala | Cys | Gly | Ser | Glu | Arg | Leu | Thr | Leu | Arg | Ser |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     | 90  |
| Leu | Gln | Pro | Leu | Ile | Ser | Leu | Cys | Glu | Ala | Pro | Pro | Ser | Pro |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     | 105 |
| Gln | Leu | Pro | Gly | Gly | Asn | Val | Thr | Ile | Thr | Tyr | Ser | Tyr | Ala |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     | 120 |
| Ala | Arg | Ala | Pro | Met | Gly | Gln | Gly | Phe | Leu | Leu | Ser | Tyr | Ser |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     | 135 |
| Asp | Trp | Leu | Met | Cys | Leu | Gln | Glu | Glu | Phe | Gln | Cys | Leu | Asn |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     | 150 |
| Arg | Cys | Val | Ser | Ala | Val | Gln | Arg | Cys | Asp | Gly | Val | Asp | Ala |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     | 165 |
| Gly | Asp | Gly | Ser | Asp | Glu | Ala | Gly | Cys | Ser | Ser | Asp | Pro | Phe |
|     |     |     |     |     |     |     |     |     |     |     |     |     | Pro |

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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 170                                 | 175                     | 180 |
| Gly Leu Thr Pro Arg Pro Val Pro Ser | Leu Pro Cys Asn Val Thr |     |
| 185                                 | 190                     | 195 |
| Leu Glu Asp Phe Tyr Gly Val Phe Ser | Ser Pro Gly Tyr Thr His |     |
| 200                                 | 205                     | 210 |
| Leu Ala Ser Val Ser His Pro Gln Ser | Cys His Trp Leu Leu Asp |     |
| 215                                 | 220                     | 225 |
| Pro His Asp Gly Arg Arg Leu Ala Val | Arg Phe Thr Ala Leu Asp |     |
| 230                                 | 235                     | 240 |
| Leu Gly Phe Gly Asp Ala Val His Val | Tyr Asp Gly Pro Gly Pro |     |
| 245                                 | 250                     | 255 |
| Pro Glu Ser Ser Arg Leu Leu Arg Ser | Leu Thr His Phe Ser Asn |     |
| 260                                 | 265                     | 270 |
| Gly Lys Ala Val Thr Val Glu Thr Leu | Ser Gly Gln Ala Val Val |     |
| 275                                 | 280                     | 285 |
| Ser Tyr His Thr Val Ala Trp Ser Asn | Gly Arg Gly Phe Asn Ala |     |
| 290                                 | 295                     | 300 |
| Thr Tyr His Val Arg Gly Tyr Cys Leu | Pro Trp Asp Arg Pro Cys |     |
| 305                                 | 310                     | 315 |
| Gly Leu Gly Ser Gly Leu Gly Ala Gly | Glu Gly Leu Gly Glu Arg |     |
| 320                                 | 325                     | 330 |
| Cys Tyr Ser Glu Ala Gln Arg Cys Asp | Gly Ser Trp Asp Cys Ala |     |
| 335                                 | 340                     | 345 |
| Asp Gly Thr Asp Glu Glu Asp Cys Pro | Gly Cys Pro Pro Gly His |     |
| 350                                 | 355                     | 360 |
| Phe Pro Cys Gly Ala Ala Gly Thr Ser | Gly Ala Thr Ala Cys Tyr |     |
| 365                                 | 370                     | 375 |
| Leu Pro Ala Asp Arg Cys Asn Tyr Gln | Thr Phe Cys Ala Asp Gly |     |
| 380                                 | 385                     | 390 |
| Ala Asp Glu Arg Arg Cys Arg His Cys | Gln Pro Gly Asn Phe Arg |     |
| 395                                 | 400                     | 405 |
| Cys Arg Asp Glu Lys Cys Val Tyr Glu | Thr Trp Val Cys Asp Gly |     |
| 410                                 | 415                     | 420 |
| Gln Pro Asp Cys Ala Asp Gly Ser Asp | Glu Trp Asp Cys Ser Tyr |     |
| 425                                 | 430                     | 435 |
| Val Leu Pro Arg Lys Val Ile Thr Ala | Ala Val Ile Gly Ser Leu |     |
| 440                                 | 445                     | 450 |
| Val Cys Gly Leu Leu Leu Val Ile Ala | Leu Gly Cys Thr Cys Lys |     |
| 455                                 | 460                     | 465 |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Ala | Ile | Arg | Thr | Gln | Glu | Tyr | Ser | Ile | Phe | Ala | Pro | Leu |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Ser | Arg | Met | Glu | Ala | Glu | Ile | Val | Gln | Gln | Gln | Ala | Pro | Pro | Ser |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |
| Tyr | Gly | Gln | Leu | Ile | Ala | Gln | Gly | Ala | Ile | Pro | Pro | Val | Glu | Asp |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |
| Phe | Pro | Thr | Glu | Asn | Pro | Asn | Asp | Asn | Ser | Val | Leu | Gly | Asn | Leu |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |
| Arg | Ser | Leu | Leu | Gln | Ile | Leu | Arg | Gln | Asp | Met | Thr | Pro | Gly | Gly |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |
| Gly | Pro | Gly | Ala | Arg | Arg | Arg | Gln | Arg | Gly | Arg | Leu | Met | Arg | Arg |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |
| Leu | Val | Arg | Arg | Leu | Arg | Arg | Trp | Gly | Leu | Leu | Pro | Arg | Thr | Asn |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |
| Thr | Pro | Ala | Arg | Ala | Ser | Glu | Ala | Arg | Ser | Gln | Val | Thr | Pro | Ser |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |
| Ala | Ala | Pro | Leu | Glu | Ala | Leu | Asp | Gly | Gly | Thr | Gly | Pro | Ala | Arg |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Glu | Gly | Gly | Ala | Val | Gly | Gly | Gln | Asp | Gly | Glu | Gln | Ala | Pro | Pro |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |
| Leu | Pro | Ile | Lys | Ala | Pro | Leu | Pro | Ser | Ala | Ser | Thr | Ser | Pro | Ala |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |
| Pro | Thr | Thr | Val | Pro | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Ser | Leu | Pro |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |
| Leu | Glu | Pro | Ser | Leu | Leu | Ser | Gly | Val | Val | Gln | Ala | Leu | Arg | Gly |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Arg | Leu | Leu | Pro | Ser | Leu | Gly | Pro | Pro | Gly | Pro | Thr | Arg | Ser | Pro |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |
| Pro | Gly | Pro | His | Thr | Ala | Val | Leu | Ala | Leu | Glu | Asp | Glu | Asp | Asp |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Val | Leu | Leu | Val | Pro | Leu | Ala | Glu | Pro | Gly | Val | Trp | Val | Ala | Glu |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Ala | Glu | Asp | Glu | Pro | Leu | Leu | Thr |     |     |     |     |     |     |     |
|     |     |     |     | 710 |     |     |     |     |     |     |     |     |     |     |

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<220>

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<223> Synthetic oligonucleotide probe

<400> 186  
agaacatagg agcagtccca ctc 23

<210> 187  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 187  
tgcttgctgc tgcacaatct cag 23

<210> 188  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 188  
ggctattgct tgccttgga cagaccctgt ggcttaggct ctggc 45

<210> 189  
<211> 663  
<212> DNA  
<213> Homo sapiens

<400> 189  
cgagctgggc gagaagtagg ggagggcggt gctccgccgc ggtggcggtt 50  
gctatcgctt cgcagaacct actcaggcag ccagctgaga agagttgagg 100  
gaaagtgctg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150

aataaaacat cgcccccttct gcttcagtgt gaaaggccac gtgaagatgc 200  
tgcggtggc actaactgtg acatctatga ccttttttat catcgacaaa 250  
gcccctgaac catatattgt tatcactgga tttgaagtca ccgttatctt 300  
atttttcata ctttttatatg tactcagact tgatcgatta atgaagtgg 350  
tattttggcc tttgcttgat attatcaact cactggtaac aacagtattc 400  
atgctcatcg tatctgtgtt ggcactgata ccagaaacca caacattgac 450  
agttggtgga ggggtgtttg cacttgtagc agcagtatgc tgtcttgccg 500  
acggggccct tatttaccgg aagcttctgt tcaatcccag cggtccttac 550  
cagaaaaagc ctgtgcatga aaaaaagaa gttttgtaat tttatattac 600  
tttttagttt gatactaagt attaaacata tttctgtatt cttccaaaaa 650  
aaaaaaaaa aaa 663

<210> 190  
<211> 152  
<212> PRT  
<213> Homo sapiens

<400> 190  
Met Asp Asn Val Gln Pro Lys Ile Lys His Arg Pro Phe Cys Phe  
1 5 10 15  
Ser Val Lys Gly His Val Lys Met Leu Arg Leu Ala Leu Thr Val  
20 25 30  
Thr Ser Met Thr Phe Phe Ile Ile Ala Gln Ala Pro Glu Pro Tyr  
35 40 45  
Ile Val Ile Thr Gly Phe Glu Val Thr Val Ile Leu Phe Phe Ile  
50 55 60  
Leu Leu Tyr Val Leu Arg Leu Asp Arg Leu Met Lys Trp Leu Phe  
65 70 75  
Trp Pro Leu Leu Asp Ile Ile Asn Ser Leu Val Thr Thr Val Phe  
80 85 90  
Met Leu Ile Val Ser Val Leu Ala Leu Ile Pro Glu Thr Thr Thr  
95 100 105  
Leu Thr Val Gly Gly Gly Val Phe Ala Leu Val Thr Ala Val Cys  
110 115 120  
Cys Leu Ala Asp Gly Ala Leu Ile Tyr Arg Lys Leu Leu Phe Asn  
125 130 135  
Pro Ser Gly Pro Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu  
140 145 150



Val Leu

<210> 191  
<211> 495  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 78, 212, 234, 487  
<223> unknown base

<400> 191  
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ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150  
catcgccctt tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200  
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250  
aaccatatat tggtatcact ggatttgaag tcaccgttat cttatttttc 300  
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350  
gcctttgctt gatattatca actcactggg aacaacagta ttcatgctca 400  
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggg 450  
ggaggggtgt ttgcacttgt gacagcagta tgctgtnttg ccgac 495

<210> 192  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 192  
cgttttgcag aacctactca ggcag 25

<210> 193  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 193  
cctccaccaa ctgtcaatgt tgtgg 25

<210> 194  
<211> 40

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 194  
aaagtgctgc tgctgggtct gcagacgcga tggataacgt 40

<210> 195  
<211> 1879  
<212> DNA  
<213> Homo sapien

<400> 195  
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cactggcccg ggcgctgctg ctgcctctgc tggcccagtg gctcctgcgc 150  
gccgccccgg agctggcccc cgcgcccttc acgctgcccc tccgggtggc 200  
cgcggccacg aaccgcgtag ttgcgcccac cccgggaccc gggaccctg 250  
ccgagcgcca cgccgacggc ttggcgctcg ccctggagcc tgccctggcg 300  
tcccccgcg ggcgcgcca cttcttgccc atggtagaca acctgcaggg 350  
ggactctggc cgcggtact acctggagat gctgatcggg accccccgc 400  
agaagctaca gattctcggt gacactggaa gcagtaactt tgccgtggca 450  
ggaacccgcg actcctacat agacacgtac tttgacacag agaggtctag 500  
cacataccgc tccaagggtt ttgacgtcac agtgaagtac acacaaggaa 550  
gctggacggg cttcgttggg gaagacctcg tcaccatccc caaaggcttc 600  
aatacttctt ttcttgtcaa cattgccact atttttgaat cagagaattt 650  
ctttttgcct gggattaaat ggaatggaat acttggccta gcttatgcca 700  
cacttgccaa gccatcaagt tctctggaga ccttcttcga ctccctggtg 750  
acacaagcaa acatcccaa cgttttctcc atgcagatgt gtggagccgg 800  
cttgcccgtt gctggatctg ggaccaacgg aggtagtctt gtcttgggtg 850  
gaattgaacc aagtttgtat aaaggagaca tctggtatac ccctattaag 900  
gaagagtggg actaccagat agaaattctg aaattggaaa ttggaggcca 950  
aagccttaat ctggactgca gagagtataa cgcagacaag gccatcgtgg 1000  
acagtggcac cacgctgctg cgccctgcccc agaaggtgtt tgatgcggtg 1050  
gtggaagctg tggcccgcg atctctgatt ccagaattct ctgatggttt 1100

ctggactggg tcccagctgg cgtgctggac gaattcggaa acaccttggt 1150  
 cttacttccc taaaatctcc atctacctga gagacgagaa ctccagcagg 1200  
 tcattccgta tcacaatcct gcctcagctt tacattcagc ccatgatggg 1250  
 ggccggcctg aattatgaat gttaccgatt cggcatttcc ccatccacaa 1300  
 atgcgctggt gatcgggtgcc acgggtgatgg agggcttota cgtcatcttc 1350  
 gacagagccc agaagagggt gggcttcgca gcgagcccct gtgcagaaat 1400  
 tgcagggtgct gcagtgtctg aaatttccgg gcctttctca acagaggatg 1450  
 tagccagcaa ctgtgtcccc gctcagcttt tgagcagagcc cattttgtgg 1500  
 attgtgtcct atgcgctcat gagegtctgt ggagccatcc tccttgtctt 1550  
 aatcgtcctg ctgctgctgc cgttcgggtg tcagcgtcgc ccccgtagcc 1600  
 ctgaggctgt caatgatgag tcctctctgg tcagacatcg ctggaaatga 1650  
 atagccaggc ctgacctcaa gcaaccatga actcagctat taagaaaatc 1700  
 acatttccag ggcagcagcc gggatcgatg gtggcgcttt ctctgtgcc 1750  
 caccgctctt caatctctgt tctgctccca gatgccttct agattcactg 1800  
 tcttttgatt cttgattttc aagctttcaa atcctcccta cttccaagaa 1850  
 aaataattaa aaaaaaaact tcattctaa 1879

<210> 196  
 <211> 518  
 <212> PRT  
 <213> Homo sapien

<400> 196  
 Met Gly Ala Leu Ala Arg Ala Leu Leu Leu Pro Leu Leu Ala Gln  
     1                    5                    10                    15  
 Trp Leu Leu Arg Ala Ala Pro Glu Leu Ala Pro Ala Pro Phe Thr  
                     20                    25                    30  
 Leu Pro Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro  
                     35                    40                    45  
 Thr Pro Gly Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu  
                     50                    55                    60  
 Ala Leu Ala Leu Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala  
                     65                    70                    75  
 Asn Phe Leu Ala Met Val Asp Asn Leu Gln Gly Asp Ser Gly Arg  
                     80                    85                    90  
 Gly Tyr Tyr Leu Glu Met Leu Ile Gly Thr Pro Pro Gln Lys Leu  
                     95                    100                    105

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Thr | Asn | Ser | Glu | Thr | Pro | Trp | Ser | Tyr | Phe | Pro | Lys | Ile | Ser | Ile |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Tyr | Leu | Arg | Asp | Glu | Asn | Ser | Ser | Arg | Ser | Phe | Arg | Ile | Thr | Ile |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Leu | Pro | Gln | Leu | Tyr | Ile | Gln | Pro | Met | Met | Gly | Ala | Gly | Leu | Asn |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Tyr | Glu | Cys | Tyr | Arg | Phe | Gly | Ile | Ser | Pro | Ser | Thr | Asn | Ala | Leu |  |

|   |     |     |
|---|-----|-----|
| 395   | 400 | 405 |
| Val Ile Gly Ala Thr Val Met Glu Gly Phe Tyr Val Ile Phe Asp |     |     |
| 410   | 415 | 420 |
| Arg Ala Gln Lys Arg Val Gly Phe Ala Ala Ser Pro Cys Ala Glu |     |     |
| 425   | 430 | 435 |
| Ile Ala Gly Ala Ala Val Ser Glu Ile Ser Gly Pro Phe Ser Thr |     |     |
| 440   | 445 | 450 |
| Glu Asp Val Ala Ser Asn Cys Val Pro Ala Gln Ser Leu Ser Glu |     |     |
| 455   | 460 | 465 |
| Pro Ile Leu Trp Ile Val Ser Tyr Ala Leu Met Ser Val Cys Gly |     |     |
| 470   | 475 | 480 |
| Ala Ile Leu Leu Val Leu Ile Val Leu Leu Leu Leu Pro Phe Arg |     |     |
| 485   | 490 | 495 |
| Cys Gln Arg Arg Pro Arg Asp Pro Glu Val Val Asn Asp Glu Ser |     |     |
| 500   | 505 | 510 |
| Ser Leu Val Arg His Arg Trp Lys                             |     |     |
| 515   |     |     |

<210> 197  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 197  
 cgcagaagct acagattctc g 21

<210> 198  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 198  
 ggaaattgga ggccaaagc 19

<210> 199  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 199  
 ggatgtagcc agcaactgtg 20

<210> 200  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 200  
 gccttggtc gttctcttc 19

<210> 201  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 201  
 ggtcctgtgc ctggatgg 18

<210> 202  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 202  
 gacaagacta cctccgttg tc 22

<210> 203  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 203  
 tgatgcacag ttcagcacct gttg 24

<210> 204  
 <211> 47  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 204  
 cgctccaagg gctttgacgt cacagtgaag tacacacaag gaagctg 47

<210> 205  
 <211> 1939  
 <212> DNA

<213> Homo sapiens

<400> 205

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ggggcgggagc cgggaggcgc ggccggcatg gaggcgctgc tgctgggcgc 150  
ggggttgctg ctgggcgctt acgtgcttgt ctactacaac ctggtgaagg 200  
ccccgccgtg cggcggcatg ggcaacctgc ggggccgcac ggccgtggtc 250  
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aaccatatcg gtccctttct gctgacacat ctgctgctgc ctgacctgaa 600  
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caggagctgc gggcatatgc tgacactaag ctggctaag tactgtttgc 750  
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gaggagccca cagtttctca accttcccc agccctcaga gctcaccaga 1200  
tttgtctaag atgacgcacc gaattcaggc taaagttgag cctgagatcc 1250  
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09976299-101504

acatctcttt tcctggttga aggaataatg ggtgattatt tcttcctgag 1450  
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 tctcggaat ttggatgtag tattttcagg cccaccctt attgattctg 1550  
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 attgagaatt agtgaactga tccctttgca accgtctagc taggtagtta 1650  
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 cagggcaggg cagctggtat cgaggtgccc catgggagta aggggacgcc 1850  
 ttccgggcgg atgcagggct ggggtcatct gtatctgaag cccctcggaa 1900  
 taaagcgcgt tgaccgcaa aaaaaaaaaa aaaaaaaaaa 1939

<210> 206  
 <211> 377  
 <212> PRT  
 <213> Homo sapiens

<400> 206  
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 1 5 10 15  
 Val Leu Val Tyr Tyr Asn Leu Val Lys Ala Pro Pro Cys Gly Gly  
 20 25 30  
 Met Gly Asn Leu Arg Gly Arg Thr Ala Val Val Thr Gly Ala Asn  
 35 40 45  
 Ser Gly Ile Gly Lys Met Thr Ala Leu Glu Leu Ala Arg Arg Gly  
 50 55 60  
 Ala Arg Val Val Leu Ala Cys Arg Ser Gln Glu Arg Gly Glu Ala  
 65 70 75  
 Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile  
 80 85 90  
 Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe  
 95 100 105  
 Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile  
 110 115 120  
 His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe  
 125 130 135  
 Asn Leu Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr  
 140 145 150



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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Leu | Leu | Pro | Cys | Leu | Lys | Ala | Cys | Ala | Pro | Ser | Arg | Val |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Val | Val | Val | Ala | Ser | Ala | Ala | His | Cys | Arg | Gly | Arg | Leu | Asp | Phe |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Lys | Arg | Leu | Asp | Arg | Pro | Val | Val | Gly | Trp | Arg | Gln | Glu | Leu | Arg |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Ala | Tyr | Ala | Asp | Thr | Lys | Leu | Ala | Asn | Val | Leu | Phe | Ala | Arg | Glu |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Leu | Ala | Asn | Gln | Leu | Glu | Ala | Thr | Gly | Val | Thr | Cys | Tyr | Ala | Ala |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| His | Pro | Gly | Pro | Val | Asn | Ser | Glu | Leu | Phe | Leu | Arg | His | Val | Pro |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Trp | Leu | Arg | Pro | Leu | Leu | Arg | Pro | Leu | Ala | Trp | Leu | Val | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Arg | Ala | Pro | Arg | Gly | Gly | Ala | Gln | Thr | Pro | Leu | Tyr | Cys | Ala | Leu |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Gln | Glu | Gly | Ile | Glu | Pro | Leu | Ser | Gly | Arg | Tyr | Phe | Ala | Asn | Cys |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| His | Val | Glu | Glu | Val | Pro | Pro | Ala | Ala | Arg | Asp | Asp | Arg | Ala | Ala |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| His | Arg | Leu | Trp | Glu | Ala | Ser | Lys | Arg | Leu | Ala | Gly | Leu | Gly | Pro |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| Gly | Glu | Asp | Ala | Glu | Pro | Asp | Glu | Asp | Pro | Gln | Ser | Glu | Asp | Ser |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |
| Glu | Ala | Pro | Ser | Ser | Leu | Ser | Thr | Pro | His | Pro | Glu | Glu | Pro | Thr |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |
| Val | Ser | Gln | Pro | Tyr | Pro | Ser | Pro | Gln | Ser | Ser | Pro | Asp | Leu | Ser |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |
| Lys | Met | Thr | His | Arg | Ile | Gln | Ala | Lys | Val | Glu | Pro | Glu | Ile | Gln |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |

Leu Ser

<210> 207

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 207

cttcatggcc ttggacttgg ccag 24

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| Met | Gly | Gly | Met | Ala | Gln | Asp | Ser | Pro | Pro | Gln | Ile | Leu | Val | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gln | Asp | Gln | Leu | Phe | Gln | Gly | Pro | Gly | Pro | Ala | Arg | Met | Ser |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gln | Ala | Ser | Gly | Gln | Pro | Pro | Pro | Thr | Ile | Arg | Trp | Leu | Leu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Gln | Pro | Leu | Ser | Met | Val | Pro | Pro | Asp | Pro | His | His | Leu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Asp | Gly | Thr | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Ala | Arg | Gly |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ala | His | Asp | Gly | Gln | Ala | Leu | Ser | Thr | Asp | Leu | Gly | Val | Tyr |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | Glu | Ala | Ser | Asn | Arg | Leu | Gly | Thr | Ala | Val | Ser | Arg | Gly |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Leu | Ser | Val | Ala | Val | Leu | Arg | Glu | Asp | Phe | Gln | Ile | Gln |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Asp | Met | Val | Ala | Val | Val | Gly | Glu | Gln | Phe | Thr | Leu | Glu |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Pro | Pro | Trp | Gly | His | Pro | Glu | Pro | Thr | Val | Ser | Trp | Trp |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Gly | Lys | Pro | Leu | Ala | Leu | Gln | Pro | Gly | Arg | His | Thr | Val |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Gly | Ser | Leu | Leu | Met | Ala | Arg | Ala | Glu | Lys | Ser | Asp | Glu |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Tyr | Met | Cys | Val | Ala | Thr | Asn | Ser | Ala | Gly | His | Arg | Glu |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ala | Ala | Arg | Val | Ser | Ile | Gln | Glu | Pro | Gln | Asp | Tyr | Thr |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Val | Glu | Leu | Leu | Ala | Val | Arg | Ile | Gln | Leu | Glu | Asn | Val |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Leu | Asn | Pro | Asp | Pro | Ala | Glu | Gly | Pro | Lys | Pro | Arg | Pro |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|                 |                     |                     |     |
|-----------------|---------------------|---------------------|-----|
| Ala Val Trp Leu | Ser Trp Lys Val Ser | Gly Pro Ala Ala Pro | Ala |
| 245             | 250                 |                     | 255 |
| Gln Ser Tyr Thr | Ala Leu Phe Arg Thr | Gln Thr Ala Pro Gly | Gly |
| 260             | 265                 |                     | 270 |
| Gln Gly Ala Pro | Trp Ala Glu Glu Leu | Leu Ala Gly Trp Gln | Ser |
| 275             | 280                 |                     | 285 |
| Ala Glu Leu Gly | Gly Leu His Trp Gly | Gln Asp Tyr Glu Phe | Lys |
| 290             | 295                 |                     | 300 |
| Val Arg Pro Ser | Ser Gly Arg Ala Arg | Gly Pro Asp Ser Asn | Val |
| 305             | 310                 |                     | 315 |
| Leu Leu Leu Arg | Leu Pro Glu Lys Val | Pro Ser Ala Pro Pro | Gln |
| 320             | 325                 |                     | 330 |
| Glu Val Thr Leu | Lys Pro Gly Asn Gly | Thr Val Phe Val Ser | Trp |
| 335             | 340                 |                     | 345 |
| Val Pro Pro Pro | Ala Glu Asn His Asn | Gly Ile Ile Arg Gly | Tyr |
| 350             | 355                 |                     | 360 |
| Gln Val Trp Ser | Leu Gly Asn Thr Ser | Leu Pro Pro Ala Asn | Trp |
| 365             | 370                 |                     | 375 |
| Thr Val Val Gly | Glu Gln Thr Gln Leu | Glu Ile Ala Thr His | Met |
| 380             | 385                 |                     | 390 |
| Pro Gly Ser Tyr | Cys Val Gln Val Ala | Ala Val Thr Gly Ala | Gly |
| 395             | 400                 |                     | 405 |
| Ala Gly Glu Pro | Ser Arg Pro Val Cys | Leu Leu Leu Glu Gln | Ala |
| 410             | 415                 |                     | 420 |
| Met Glu Arg Ala | Thr Gln Glu Pro Ser | Glu His Gly Pro Trp | Thr |
| 425             | 430                 |                     | 435 |
| Leu Glu Gln Leu | Arg Ala Thr Leu Lys | Arg Pro Glu Val Ile | Ala |
| 440             | 445                 |                     | 450 |
| Thr Cys Gly Val | Ala Leu Trp Leu Leu | Leu Leu Gly Thr Ala | Val |
| 455             | 460                 |                     | 465 |
| Cys Ile His Arg | Arg Arg Arg Ala Arg | Val His Leu Gly Pro | Gly |
| 470             | 475                 |                     | 480 |
| Leu Tyr Arg Tyr | Thr Ser Glu Asp Ala | Ile Leu Lys His Arg | Met |
| 485             | 490                 |                     | 495 |
| Asp His Ser Asp | Ser Gln Trp Leu Ala | Asp Thr Trp Arg Ser | Thr |
| 500             | 505                 |                     | 510 |
| Ser Gly Ser Arg | Asp Leu Ser Ser Ser | Ser Ser Leu Ser Ser | Arg |
| 515             | 520                 |                     | 525 |
| Leu Gly Ala Asp | Ala Arg Asp Pro Leu | Asp Cys Arg Arg Ser | Leu |

| 530 |     |     |     |     |     |     |     |     |     | 535 |     |     |     |     | 540 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Ser | Trp | Asp | Ser | Arg | Ser | Pro | Gly | Val | Pro | Leu | Leu | Pro | Asp |     |  |  |  |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |  |  |  |  |
| Thr | Ser | Thr | Phe | Tyr | Gly | Ser | Leu | Ile | Ala | Glu | Leu | Pro | Ser | Ser |     |  |  |  |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |     |  |  |  |  |
| Thr | Pro | Ala | Arg | Pro | Ser | Pro | Gln | Val | Pro | Ala | Val | Arg | Arg | Leu |     |  |  |  |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |     |  |  |  |  |
| Pro | Pro | Gln | Leu | Ala | Gln | Leu | Ser | Ser | Pro | Cys | Ser | Ser | Ser | Asp |     |  |  |  |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |     |  |  |  |  |
| Ser | Leu | Cys | Ser | Arg | Arg | Gly | Leu | Ser | Ser | Pro | Arg | Leu | Ser | Leu |     |  |  |  |  |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |     |  |  |  |  |
| Ala | Pro | Ala | Glu | Ala | Trp | Lys | Ala | Lys | Lys | Lys | Gln | Glu | Leu | Gln |     |  |  |  |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |     |  |  |  |  |
| His | Ala | Asn | Ser | Ser | Pro | Leu | Leu | Arg | Gly | Ser | His | Ser | Leu | Glu |     |  |  |  |  |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |     |  |  |  |  |
| Leu | Arg | Ala | Cys | Glu | Leu | Gly | Asn | Arg | Gly | Ser | Lys | Asn | Leu | Ser |     |  |  |  |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |     |  |  |  |  |
| Gln | Ser | Pro | Gly | Ala | Val | Pro | Gln | Ala | Leu | Val | Ala | Trp | Arg | Ala |     |  |  |  |  |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |     |  |  |  |  |
| Leu | Gly | Pro | Lys | Leu | Leu | Ser | Ser | Ser | Asn | Glu | Leu | Val | Thr | Arg |     |  |  |  |  |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |     |  |  |  |  |
| His | Leu | Pro | Pro | Ala | Pro | Leu | Phe | Pro | His | Glu | Thr | Pro | Pro | Thr |     |  |  |  |  |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |     |  |  |  |  |
| Gln | Ser | Gln | Gln | Thr | Gln | Pro | Pro | Val | Ala | Pro | Gln | Ala | Pro | Ser |     |  |  |  |  |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |     |  |  |  |  |
| Ser | Ile | Leu | Leu | Pro | Ala | Ala | Pro | Ile | Pro | Ile | Leu | Ser | Pro | Cys |     |  |  |  |  |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |  |  |
| Ser | Pro | Pro | Ser | Pro | Gln | Ala | Ser | Ser | Leu | Ser | Gly | Pro | Ser | Pro |     |  |  |  |  |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |  |  |  |  |
| Ala | Ser | Ser | Arg | Leu | Ser | Ser | Ser | Ser | Leu | Ser | Ser | Leu | Gly | Glu |     |  |  |  |  |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |  |  |  |  |
| Asp | Gln | Asp | Ser | Val | Leu | Thr | Pro | Glu | Glu | Val | Ala | Leu | Cys | Leu |     |  |  |  |  |
|     |     |     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |  |  |  |  |
| Glu | Leu | Ser | Glu | Gly | Glu | Glu | Thr | Pro | Arg | Asn | Ser | Val | Ser | Pro |     |  |  |  |  |
|     |     |     |     | 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |  |  |  |  |
| Met | Pro | Arg | Ala | Pro | Ser | Pro | Pro | Thr | Thr | Tyr | Gly | Tyr | Ile | Ser |     |  |  |  |  |
|     |     |     |     | 800 |     |     |     |     | 805 |     |     |     |     | 810 |     |  |  |  |  |
| Val | Pro | Thr | Ala | Ser | Glu | Phe | Thr | Asp | Met | Gly | Arg | Thr | Gly | Gly |     |  |  |  |  |
|     |     |     |     | 815 |     |     |     |     | 820 |     |     |     |     | 825 |     |  |  |  |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Val | Gly | Pro | Lys | Gly | Gly | Val | Leu | Leu | Cys | Pro | Pro | Arg | Pro | 830 | 835 | 840 |
| Cys | Leu | Thr | Pro | Thr | Pro | Ser | Glu | Gly | Ser | Leu | Ala | Asn | Gly | Trp | 845 | 850 | 855 |
| Gly | Ser | Ala | Ser | Glu | Asp | Asn | Ala | Ala | Ser | Ala | Arg | Ala | Ser | Leu | 860 | 865 | 870 |
| Val | Ser | Ser | Ser | Asp | Gly | Ser | Phe | Leu | Ala | Asp | Ala | His | Phe | Ala | 875 | 880 | 885 |
| Arg | Ala | Leu | Ala | Val | Ala | Val | Asp | Ser | Phe | Gly | Phe | Gly | Leu | Glu | 890 | 895 | 900 |
| Pro | Arg | Glu | Ala | Asp | Cys | Val | Phe | Ile | Asp | Ala | Ser | Ser | Pro | Pro | 905 | 910 | 915 |
| Ser | Pro | Arg | Asp | Glu | Ile | Phe | Leu | Thr | Pro | Asn | Leu | Ser | Leu | Pro | 920 | 925 | 930 |
| Leu | Trp | Glu | Trp | Arg | Pro | Asp | Trp | Leu | Glu | Asp | Met | Glu | Val | Ser | 935 | 940 | 945 |
| His | Thr | Gln | Arg | Leu | Gly | Arg | Gly | Met | Pro | Pro | Trp | Pro | Pro | Asp | 950 | 955 | 960 |
| Ser | Gln | Ile | Ser | Ser | Gln | Arg | Ser | Gln | Leu | His | Cys | Arg | Met | Pro | 965 | 970 | 975 |
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gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150

ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200

tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250

agggcaggggt gtccatccgt gacagccgcc aggagctctc gtcattgtg 300

accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggg 350

cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400

caggaccctg ctgtcctccc tccccttctc ccaccttcca gcctctgggt 450

acaacacgcc tgcagcccaa ggcaaaagct cagcaaacc agccccagg 500

attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550

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gaaaggactt ctcagtacac aggaacctct cctcaccag cgacctctcc 650

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<210> 216  
 <211> 332  
 <212> PRT  
 <213> Homo sapiens

<400> 216

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly | 1   | 5   | 10  | 15 |
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly | 20  | 25  | 30  |    |
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp | 35  | 40  | 45  |    |
| His | Arg | Lys | Tyr | Trp | Cys | Arg | Lys | Gly | Gly | Ile | Leu | Phe | Ser | Arg | 50  | 55  | 60  |    |
| Cys | Ser | Gly | Thr | Ile | Tyr | Ala | Glu | Glu | Glu | Gly | Gln | Glu | Thr | Met | 65  | 70  | 75  |    |
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu | 80  | 85  | 90  |    |
| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr | 95  | 100 | 105 |    |
| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile | 110 | 115 | 120 |    |
| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser | 125 | 130 | 135 |    |
| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala | 140 | 145 | 150 |    |
| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | 155 | 160 | 165 |    |
| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | 170 | 175 | 180 |    |
| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | 185 | 190 | 195 |    |
| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro |     |     |     |    |

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| 200   | 205 | 210 |
|---|-----|-----|
| Ala Gly Ser Ser Arg Pro Pro Met Gln Leu Asp Ser Thr Ser Ala |     |     |
| 215   | 220 | 225 |
| Glu Asp Thr Ser Pro Ala Leu Ser Ser Gly Ser Ser Lys Pro Arg |     |     |
| 230   | 235 | 240 |
| Val Ser Ile Pro Met Val Arg Ile Leu Ala Pro Val Leu Val Leu |     |     |
| 245   | 250 | 255 |
| Leu Ser Leu Leu Ser Ala Ala Gly Leu Ile Ala Phe Cys Ser His |     |     |
| 260   | 265 | 270 |
| Leu Leu Leu Trp Arg Lys Glu Ala Gln Gln Ala Thr Glu Thr Gln |     |     |
| 275   | 280 | 285 |
| Arg Asn Glu Lys Phe Trp Leu Ser Arg Leu Thr Ala Glu Glu Lys |     |     |
| 290   | 295 | 300 |
| Glu Ala Pro Ser Gln Ala Pro Glu Gly Asp Val Ile Ser Met Pro |     |     |
| 305   | 310 | 315 |
| Pro Leu His Thr Ser Glu Glu Glu Leu Gly Phe Ser Lys Phe Val |     |     |
| 320   | 325 | 330 |

Ser Ala

- <210> 217
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 217
- ccctgcagtg cacctacagg gaag 24
- <210> 218
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 218
- ctgtcttccc ctgcttggt gtgg 24
- <210> 219
- <211> 47
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe

<400> 219  
 ggtgcaggaa ggggtgggata ctcttctctc gctgctctgg ccacatc 47

<210> 220  
 <211> 950  
 <212> DNA  
 <213> Homo sapiens

<400> 220  
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 cagtgtgaaa gaaccagtgg tctcgctctg ttgccaggc tagagtgtac 150  
 tggcgtgata atagctcact gcagcctcag actcctggac ttgagaaatc 200  
 ctctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250  
 cctgtttctt ctcttctgt gagtggacca cggaggctgg tgagctgcct 300  
 gtcaccccaa agctcagctc tgagccagag tgggtggggc tccacctctg 350  
 ccgccggcat agaagccagg agcagggtc tcagaaggcg gtggtgcca 400  
 gctgggatca tgttgttggc cctggctctg ctgctcagct gcctgctacc 450  
 ctccagttag gccaagctct acggtcgttg tgaactggcc agagtgtac 500  
 atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550  
 tgccttgctt atttcacaag cggtttcaac gcagctgctt tggactacga 600  
 ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggagggt 650  
 ggtgcagcaa cctcaccccg aacgtcccca acgtgtgccg gatgtactgc 700  
 tcagatttgt tgaatcctaa totcaaggat accgttatct gtgccatgaa 750  
 gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800  
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850  
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 cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<210> 221  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<400> 221  
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 Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu  
 20 25 30

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His Asp Phe Gly Leu Asp Gly Tyr Arg Gly Tyr Ser Leu Ala Asp  
                     35                    40                    45  
 Trp Val Cys Leu Ala Tyr Phe Thr Ser Gly Phe Asn Ala Ala Ala  
                     50                    55                    60  
 Leu Asp Tyr Glu Ala Asp Gly Ser Thr Asn Asn Gly Ile Phe Gln  
                     65                    70                    75  
 Ile Asn Ser Arg Arg Trp Cys Ser Asn Leu Thr Pro Asn Val Pro  
                     80                    85                    90  
 Asn Val Cys Arg Met Tyr Cys Ser Asp Leu Leu Asn Pro Asn Leu  
                     95                    100                    105  
 Lys Asp Thr Val Ile Cys Ala Met Lys Ile Thr Gln Glu Pro Gln  
                     110                    115                    120  
 Gly Leu Gly Tyr Trp Glu Ala Trp Arg His His Cys Gln Gly Lys  
                     125                    130                    135  
 Asp Leu Thr Glu Trp Val Asp Gly Cys Asp Phe  
                     140                    145

<210> 222  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 222  
 gggatcatgt tgttgccct ggtc 24

<210> 223  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 223  
 gcaaggcaga cccagtcagc cag 23

<210> 224  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 224  
 ctgcctgcta cctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225

<211> 2049  
<212> DNA  
<213> Homo sapiens

<400> 225  
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cgagcaactg gctgtacctg gccaaactgt cgtcgggtggg gagcatctca 150  
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200  
gatgtgcaag cggaacctgg aagtcatgga ctcgggtgcgc cgcggtgccc 250  
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ctctgacaac atcgctacg gtgtggcctt ctacacagtcg tttgtggatg 550  
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gagccgtgcc gcccttcgc cagggtgggtc acgcactgaa ggagaagttt 750  
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<210> 226  
 <211> 351  
 <212> PRT  
 <213> Homo sapiens

<400> 226  
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 1 5 10 15  
 Ala Val Phe Ser Ala Ala Ala Ser Asn Trp Leu Tyr Leu Ala Lys  
 20 25 30  
 Leu Ser Ser Val Gly Ser Ile Ser Glu Glu Glu Thr Cys Glu Lys  
 35 40 45  
 Leu Lys Gly Leu Ile Gln Arg Gln Val Gln Met Cys Lys Arg Asn  
 50 55 60  
 Leu Glu Val Met Asp Ser Val Arg Arg Gly Ala Gln Leu Ala Ile  
 65 70 75  
 Glu Glu Cys Gln Tyr Gln Phe Arg Asn Arg Arg Trp Asn Cys Ser  
 80 85 90  
 Thr Leu Asp Ser Leu Pro Val Phe Gly Lys Val Val Thr Gln Gly  
 95 100 105  
 Thr Arg Glu Ala Ala Phe Val Tyr Ala Ile Ser Ser Ala Gly Val  
 110 115 120



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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Pro | Phe | Arg | Gln | Val | Gly | His | Ala | Leu | Lys | Glu | Lys | Phe | Asp | Gly |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ala | Thr | Glu | Val | Glu | Pro | Arg | Arg | Val | Gly | Ser | Ser | Arg | Ala | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Val | Pro | Arg | Asn | Ala | Gln | Phe | Lys | Pro | His | Thr | Asp | Glu | Asp | Leu |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Val | Tyr | Leu | Glu | Pro | Ser | Pro | Asp | Phe | Cys | Glu | Gln | Asp | Met | Arg |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Ser | Gly | Val | Leu | Gly | Thr | Arg | Gly | Arg | Thr | Cys | Asn | Lys | Thr | Ser |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Lys | Ala | Ile | Asp | Gly | Cys | Glu | Leu | Leu | Cys | Cys | Gly | Arg | Gly | Phe |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| His | Thr | Ala | Gln | Val | Glu | Leu | Ala | Glu | Arg | Cys | Ser | Cys | Lys | Phe |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |
| His | Trp | Cys | Cys | Phe | Val | Lys | Cys | Arg | Gln | Cys | Gln | Arg | Leu | Val |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |
| Glu | Leu | His | Thr | Cys | Arg |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 350 |     |     |     |     |     |     |     |     |     |     |

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

gctgcagctg caaattccac tgg 23

<210> 228  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 228  
tggtagggaga ctgttttaaat tatcggcc 28

<210> 229  
<211> 41  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 229  
tgcttcgtca agtgccggca gtgccagcgg ctctggagt t 41

<210> 230  
<211> 1355  
<212> DNA  
<213> Homo sapiens

<400> 230  
cggacgcgtg ggcggacgcg tgggaggacg cgtgggaggga cgcgtgggct 50  
gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggaggga 100  
gctccgagga ggtccccgga gggccctggg gacgctgggt gcaactggagc 150  
aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200  
ggctgtgatt ctgagtatcc tattgtccaa ggccctccacg gagcgcgagg 250  
cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300  
gcggcgctgg gtgcctgaa ggaggaggtc ggagactgcc acagctgctg 350  
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cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450  
cgcgtgacct agggcttggc tgaagccggc aggggaggctg aggacgtccg 500  
cactgagctg ttccgggagc tggaggccgt gaggctccag aacaactcct 550  
gcgagccgtg cccacgctg tggctgtcct tcgagggtc ctgctacttt 600  
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tgtccagccc agtgctggg ctctgggacc tccatgccga cctcatccta 1150  
actccactca cgcagacca acctaacctc cactagctcc aaaatccctg 1200  
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gtgactgagg actggagctg tttggttttc tcgcattttc caccaaactg 1300  
gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350  
aaaaa 1355

<210> 231  
<211> 293  
<212> PRT  
<213> Homo sapiens

<400> 231  
Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu  
1 5 10 15  
Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg  
20 25 30  
Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp  
35 40 45  
Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg  
50 55 60  
Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser  
65 70 75  
Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp  
80 85 90  
Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr  
95 100 105  
Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu  
110 115 120  
Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala  
125 130 135

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Gly | Arg | Gly | Arg | Glu | Asp | Val | Arg | Thr | Glu | Leu | Phe | Arg |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Ala | Leu | Glu | Ala | Val | Arg | Leu | Gln | Asn | Asn | Ser | Cys | Glu | Pro | Cys |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Pro | Thr | Ser | Trp | Leu | Ser | Phe | Glu | Gly | Ser | Cys | Tyr | Phe | Phe | Ser |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Val | Pro | Lys | Thr | Thr | Trp | Ala | Ala | Ala | Gln | Asp | His | Cys | Ala | Asp |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Ala | Ser | Ala | His | Leu | Val | Ile | Val | Gly | Gly | Leu | Asp | Glu | Gln | Gly |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Phe | Leu | Thr | Arg | Asn | Thr | Arg | Gly | Arg | Gly | Tyr | Trp | Leu | Gly | Leu |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Arg | Ala | Val | Arg | His | Leu | Gly | Lys | Val | Gln | Gly | Tyr | Gln | Trp | Val |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Asp | Gly | Val | Ser | Leu | Ser | Phe | Ser | His | Trp | Asn | Gln | Gly | Glu | Pro |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Asn | Asp | Ala | Trp | Gly | Arg | Glu | Asn | Cys | Val | Met | Met | Leu | His | Thr |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Gly | Leu | Trp | Asn | Asp | Ala | Pro | Cys | Asp | Ser | Glu | Lys | Asp | Gly | Trp |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Ile | Cys | Glu | Lys | Arg | His | Asn | Cys |     |     |     |     |     |     |     |
|     |     |     |     | 290 |     |     |     |     |     |     |     |     |     |     |

<210> 232  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 232  
 gcgagaactg tgtcatgatg ctgc 24  
  
 <210> 233  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 233  
 gtttctgaga ctcagcagcg gtgg 24  
  
 <210> 234  
 <211> 50  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235

<211> 1847

<212> DNA

<213> Homo sapiens

<400> 235

gccaggggaa gagggtgatc cgacccgggg aaggtcgctg ggcagggcga 50  
gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctccctcttt 100  
ctccacgctc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150  
agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200  
gcttaaataag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250  
cgctcccgt gtcctgcg ggtgatggaa aaccccagcc cggccgccc 300  
cctgggcaag gccctctgcg ctctcctcct ggccactctc ggcgcccgcg 350  
gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400  
tacagcatca ccttcacggg caagtggagc cagacggcct tcccaagca 450  
gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctgggggccc 500  
cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550  
gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600  
gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650  
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ggtgaccgag ataacgtcct cctctcccag ccacccggcc aactccttct 950  
actaccgcg gctgaaggcc ctgcctccca tcgccagggt gacactgctg 1000  
cggtgcgac agagccccag ggccttcac cctcccgccc cagtcctgcc 1050  
cagcagggac aatgagattg tagacagcgc ctcaattcca gaaacgcgc 1100

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tggactgcga ggtctccctg tggctcgtcct ggggactgtg cggaggccac 1150  
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 cgccaacaac gggagcccct gccccgagct cgaagaagag gctgagtgcg 1250  
 tccctgataa ctgctgtctaa gaccagagcc ccgcagcccc tggggccccc 1300  
 cggagccatg ggggtgtcggg ggctcctgtg caggctcatg ctgcaggcgg 1350  
 ccgagggcac aggggggtttc gcgctgctcc tgaccgcggt gaggcgcgc 1400  
 cgaccatctc tgactgaag ggccctctgg tggccggcac gggcattggg 1450  
 aaacagcctc ctcttttccc aaccttgctt cttaggggcc cccgtgtccc 1500  
 gtctgtcttc agcctcctcc tctgcagga taaagtcac cccaaggctc 1550  
 cagctactct aaattatgtc tccttataag ttattgctgc tccaggagat 1600  
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 agcggggggcc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750  
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 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236  
 <211> 331  
 <212> PRT  
 <213> Homo sapiens

<400> 236  
 Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys  
 1 5 10 15  
 Ala Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly  
 20 25 30  
 Gly Glu Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile  
 35 40 45  
 Thr Phe Thr Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr  
 50 55 60  
 Pro Leu Phe Arg Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala  
 65 70 75  
 Ala His Ser Ser Asp Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val  
 80 85 90  
 Ser Asn Gly Leu Arg Asp Phe Ala Glu Arg Gly Glu Ala Trp Ala  
 95 100 105  
 Leu Met Lys Glu Ile Glu Ala Ala Gly Glu Ala Leu Gln Ser Val

|                 | 110                 |                         | 115 |  | 120 |
|-----------------|---------------------|-------------------------|-----|--|-----|
| His Glu Val Phe | Ser Ala Pro Ala Val | Pro Ser Gly Thr Gly Gln |     |  |     |
|                 | 125                 |                         | 130 |  | 135 |
| Thr Ser Ala Glu | Leu Glu Val Gln Arg | Arg His Ser Leu Val Ser |     |  |     |
|                 | 140                 |                         | 145 |  | 150 |
| Phe Val Val Arg | Ile Val Pro Ser Pro | Asp Trp Phe Val Gly Val |     |  |     |
|                 | 155                 |                         | 160 |  | 165 |
| Asp Ser Leu Asp | Leu Cys Asp Gly Asp | Arg Trp Arg Glu Gln Ala |     |  |     |
|                 | 170                 |                         | 175 |  | 180 |
| Ala Leu Asp Leu | Tyr Pro Tyr Asp Ala | Gly Thr Asp Ser Gly Phe |     |  |     |
|                 | 185                 |                         | 190 |  | 195 |
| Thr Phe Ser Ser | Pro Asn Phe Ala Thr | Ile Pro Gln Asp Thr Val |     |  |     |
|                 | 200                 |                         | 205 |  | 210 |
| Thr Glu Ile Thr | Ser Ser Ser Pro Ser | His Pro Ala Asn Ser Phe |     |  |     |
|                 | 215                 |                         | 220 |  | 225 |
| Tyr Tyr Pro Arg | Leu Lys Ala Leu Pro | Pro Ile Ala Arg Val Thr |     |  |     |
|                 | 230                 |                         | 235 |  | 240 |
| Leu Leu Arg Leu | Arg Gln Ser Pro Arg | Ala Phe Ile Pro Pro Ala |     |  |     |
|                 | 245                 |                         | 250 |  | 255 |
| Pro Val Leu Pro | Ser Arg Asp Asn Glu | Ile Val Asp Ser Ala Ser |     |  |     |
|                 | 260                 |                         | 265 |  | 270 |
| Val Pro Glu Thr | Pro Leu Asp Cys Glu | Val Ser Leu Trp Ser Ser |     |  |     |
|                 | 275                 |                         | 280 |  | 285 |
| Trp Gly Leu Cys | Gly Gly His Cys Gly | Arg Leu Gly Thr Lys Ser |     |  |     |
|                 | 290                 |                         | 295 |  | 300 |
| Arg Thr Arg Tyr | Val Arg Val Gln Pro | Ala Asn Asn Gly Ser Pro |     |  |     |
|                 | 305                 |                         | 310 |  | 315 |
| Cys Pro Glu Leu | Glu Glu Glu Ala Glu | Cys Val Pro Asp Asn Cys |     |  |     |
|                 | 320                 |                         | 325 |  | 330 |

Val

- <210> 237
- <211> 22
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 237
- cagcactgcc aggggaagag gg 22

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<210> 238  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Synthetic oligonucleotide probe  
  
<400> 238  
caggactcgc tacgtccg 18  
  
<210> 239  
<211> 24  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Synthetic oligonucleotide probe  
  
<400> 239  
cagcccccttc tcctcctttc tccc 24  
  
<210> 240  
<211> 25  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Synthetic oligonucleotide probe  
  
<400> 240  
gcagttatca gggacgcact cagcc 25  
  
<210> 241  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Synthetic oligonucleotide probe  
  
<400> 241  
ccagcgagag gcagatag 18  
  
<210> 242  
<211> 23  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Synthetic oligonucleotide probe  
  
<400> 242  
cggtcaccgt gtcctgcggg atg 23  
  
<210> 243  
<211> 42  
<212> DNA



<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 243

cagcccccttc tctctctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894

<212> DNA

<213> Homo sapiens

<400> 244

ggcggcgctcc gtgaggggct cctttgggca ggggtagtgt ttggtgtccc 50  
tgtcttgogt gatattgaca aactgaagct ttcctgcacc actggactta 100  
aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150  
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200  
tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250  
gctggagata ttgacataga gttgtgggtcc aaagaagctc ctaaagcttg 300  
cagaaatddd atccaacttt gtttggaagc ttattatgac aataccattd 350  
ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400  
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450  
tcattcacgg ttgcgtttta atcggagagg actggttgcc atggcaaatg 500  
ctggtttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550  
gatgaactta acaataagca taccatcttt ggaaaggtda caggggatac 600  
agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650  
gaccacataa tccacacaaa ataaaaagct gtgaggtdtt gttdaatcct 700  
tttgatgaca tcattccaag ggaaattaaa aggtgaaaa aagagaaacc 750  
agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aattdtagtd 800  
tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850  
gttagtcaga gcatgaaggc caaaagcaaa agtagtcatg acttgcttaa 900  
ggatgatcca catctcagtd ctgttccagt tgtagaaagt gaaaaaggtg 950  
atgcaccaga tttagtdgat gatggagaag atgaaagtgc agagcatgat 1000  
gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050  
aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100

aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150  
 agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200  
 tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gcccctccag 1250  
 atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300  
 aggaagcaac agtcaaagaa gggaacttcc cggaagatc agacccttgc 1350  
 actgctgaac cagtttaaact ctaaactcac tcaagcaatt gctgaaacac 1400  
 ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450  
 tcacatgtac ttcagtttga ggataaaaagc agaaaagtga aagatgcaag 1500  
 catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550  
 ataaaagaag gaggggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600  
 agaagataaa atgagaataa tgataaccag aacttgctgg aatgtgcct 1650  
 acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700  
 gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750  
 tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800  
 catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850  
 taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245  
 <211> 472  
 <212> PRT  
 <213> Homo sapiens

<400> 245  
 Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val  
 1 5 10 15  
 Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser  
 20 25 30  
 Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu  
 35 40 45  
 Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly  
 50 55 60  
 Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly  
 65 70 75  
 Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg  
 80 85 90  
 Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly  
 95 100 105

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | His | Asp | Asn | Gly | Ser | Gln | Phe | Phe | Phe | Thr | Leu | Gly | Arg | Ala | 110 | 115 | 120 |
| Asp | Glu | Leu | Asn | Asn | Lys | His | Thr | Ile | Phe | Gly | Lys | Val | Thr | Gly | 125 | 130 | 135 |
| Asp | Thr | Val | Tyr | Asn | Met | Leu | Arg | Leu | Ser | Glu | Val | Asp | Ile | Asp | 140 | 145 | 150 |
| Asp | Asp | Glu | Arg | Pro | His | Asn | Pro | His | Lys | Ile | Lys | Ser | Cys | Glu | 155 | 160 | 165 |
| Val | Leu | Phe | Asn | Pro | Phe | Asp | Asp | Ile | Ile | Pro | Arg | Glu | Ile | Lys | 170 | 175 | 180 |
| Arg | Leu | Lys | Lys | Glu | Lys | Pro | Glu | Glu | Glu | Val | Lys | Lys | Leu | Lys | 185 | 190 | 195 |
| Pro | Lys | Gly | Thr | Lys | Asn | Phe | Ser | Leu | Leu | Ser | Phe | Gly | Glu | Glu | 200 | 205 | 210 |
| Ala | Glu | Glu | Glu | Glu | Glu | Glu | Val | Asn | Arg | Val | Ser | Gln | Ser | Met | 215 | 220 | 225 |
| Lys | Gly | Lys | Ser | Lys | Ser | Ser | His | Asp | Leu | Leu | Lys | Asp | Asp | Pro | 230 | 235 | 240 |
| His | Leu | Ser | Ser | Val | Pro | Val | Val | Glu | Ser | Glu | Lys | Gly | Asp | Ala | 245 | 250 | 255 |
| Pro | Asp | Leu | Val | Asp | Asp | Gly | Glu | Asp | Glu | Ser | Ala | Glu | His | Asp | 260 | 265 | 270 |
| Glu | Tyr | Ile | Asp | Gly | Asp | Glu | Lys | Asn | Leu | Met | Arg | Glu | Arg | Ile | 275 | 280 | 285 |
| Ala | Lys | Lys | Leu | Lys | Lys | Asp | Thr | Ser | Ala | Asn | Val | Lys | Ser | Ala | 290 | 295 | 300 |
| Gly | Glu | Gly | Glu | Val | Glu | Lys | Lys | Ser | Val | Ser | Arg | Ser | Glu | Glu | 305 | 310 | 315 |
| Leu | Arg | Lys | Glu | Ala | Arg | Gln | Leu | Lys | Arg | Glu | Leu | Leu | Ala | Ala | 320 | 325 | 330 |
| Lys | Gln | Lys | Lys | Val | Glu | Asn | Ala | Ala | Lys | Gln | Ala | Glu | Lys | Arg | 335 | 340 | 345 |
| Ser | Glu | Glu | Glu | Glu | Ala | Pro | Pro | Asp | Gly | Ala | Val | Ala | Glu | Tyr | 350 | 355 | 360 |
| Arg | Arg | Glu | Lys | Gln | Lys | Tyr | Glu | Ala | Leu | Arg | Lys | Gln | Gln | Ser | 365 | 370 | 375 |
| Lys | Lys | Gly | Thr | Ser | Arg | Glu | Asp | Gln | Thr | Leu | Ala | Leu | Leu | Asn | 380 | 385 | 390 |
| Gln | Phe | Lys | Ser | Lys | Leu | Thr | Gln | Ala | Ile | Ala | Glu | Thr | Pro | Glu |     |     |     |

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|   |     |     |
|---|-----|-----|
| 395   | 400 | 405 |
| Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met |     |     |
| 410   | 415 | 420 |
| Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp |     |     |
| 425   | 430 | 435 |
| Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg |     |     |
| 440   | 445 | 450 |
| Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met |     |     |
| 455   | 460 | 465 |
| Arg Glu Lys Lys Glu Arg Arg                                 |     |     |
| 470   |     |     |

<210> 246  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 246  
 tgcggagatc ctactggcac aggg 24

<210> 247  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 247  
 cgagtttagtc agagcatg 18

<210> 248  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 248  
 cagatgggtgc tggtgccg 18

<210> 249  
 <211> 29  
 <212> DNA  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 249  
caactggaac aggaactgag atgtggatc 29

<210> 250  
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<212> DNA  
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<400> 250  
ctggttcagc agtgcaaggg tctg 24

<210> 251  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 251  
cctctccgat taaaacgc 18

<210> 252  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 252  
gagaggactg gttgccatgg caaatgctgg ttctcatgat aatgg 45

<210> 253  
<211> 2456  
<212> DNA  
<213> Homo sapiens

<400> 253  
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gatgctgccc ggcccgctc ggctttgagg cgagagaagt gtcccagacc 100  
catttcgcct tgctgacggc gtogagccct ggccagacat gtccacaggg 150  
ttctccttcg ggtccgggac tctgggctcc accaccgtgg ccgccggcgg 200  
gaccagcaca ggcggcggtt tctccttcgg aacgggaacg tctagcaacc 250  
cttctgtggg gctcaatttt ggaaatcttg gaagtacttc aactccagca 300  
actacatctg ctccttcaag tggttttgga accgggctct ttggatctaa 350  
acctgccact gggttcactc taggaggaac aaatacaggt gccttgacaca 400

ccaagaggcc tcaagtggc accaaatatg gaaccctgca aggaaaacag 450  
atgcatgtgg ggaagacacc catccaagtc tttttaggag tccccttctc 500  
cagacctcct ctaggtatcc tcaggtttgc acctccagaa cccccggagc 550  
cctggaaagg aatcagagat gctaccacct acccgctgg atggagtctc 600  
gctctgtcgc caggctggag tgcagtggca cgatctcggc tcaactgcaac 650  
ctccgcctcc cgggttcaag cgagtctcct gcctcagcct ctgagtgtct 700  
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gtcagcacgc gggaaacggta caagtggctg cgcttcagcg aggactgtct 800  
gtacctgaac gtgtacgcgc cggcgcgcg gcgcggggat cccagctgc 850  
cagtgatggc ctggttcccg ggaggcgct tcctcgtgg cgctgcttct 900  
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tctgcagcac aggctcggca tcttcggctt cctgagcacg gacgacagcc 1000  
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gttcggccag tcggcggggg ccatgagcat ctcaggactg atgatgtcac 1150  
ccctagcctc ggggtctctc catcgggcca tttccagag tggcaccgcg 1200  
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tgccacactg gctggatgca accacaacag cacacagatc ctggtaaact 1300  
gcctgagggc actatcaggg accaaggtga tgcgtgtgtc caacaagatg 1350  
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catgagccct gtggtggatg gtgtggtgat ccagatgac cctttggtgc 1450  
tctgaccca ggggaaggtt tcctctgtgc cctaccttct aggtgtcaac 1500  
aacctggaat tcaattggct cttgccttat aatatcacca aggagcaggt 1550  
accacttggt gtggaggagt acctggacaa tgtcaatgag catgactgga 1600  
agatgctacg aaaccgtatg atggacatag ttcaagatgc cactttcgtg 1650  
tatgccacac tgcagactgc tcaactaccac cgagaaaccc caatgatggg 1700  
aatctgcctt gctggccag ctacaacaag gatgaaaagt acctgcagct 1750  
ggattttacc acaagagtgg gcatgaagct caaggagaag aagatggctt 1800  
tttgatgag tctgtaccag tctcaaagac ctgagaagca gaggcaattc 1850

taagggtggc tatgcaggaa ggagccaaag aggggtttgc cccaccatc 1900  
 caggccctgg ggagactagc catggacata cctggggaca agagttctac 1950  
 ccacccagc ttagaactgc aggagctccc tgctgcctcc aggccaaagc 2000  
 tagagctttt gcctgttgtg tgggacctgc actgcctttt ccagcctgac 2050  
 atcccatgat gcccctctac ttcactgttg acatccagtt aggccaggcc 2100  
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 ttttcccttc ttcaaactcct cccacccttc aatgtctcct tgtgactcct 2200  
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 tggcctggag gcctagggca ggttgtgaca tggagcaaac ttttgtagt 2350  
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 gtctatacac aggggtggtc tcttcaataa agaagtgttg attagaaaaa 2450  
 aaaaaa 2456

<210> 254  
 <211> 545  
 <212> PRT  
 <213> Homo sapiens

<400> 254  
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 Gly Thr Gly Thr Ser Ser Asn Pro Ser Val Gly Leu Asn Phe Gly  
 35 40 45  
 Asn Leu Gly Ser Thr Ser Thr Pro Ala Thr Thr Ser Ala Pro Ser  
 50 55 60  
 Ser Gly Phe Gly Thr Gly Leu Phe Gly Ser Lys Pro Ala Thr Gly  
 65 70 75  
 Phe Thr Leu Gly Gly Thr Asn Thr Gly Ala Leu His Thr Lys Arg  
 80 85 90  
 Pro Gln Val Val Thr Lys Tyr Gly Thr Leu Gln Gly Lys Gln Met  
 95 100 105  
 His Val Gly Lys Thr Pro Ile Gln Val Phe Leu Gly Val Pro Phe  
 110 115 120  
 Ser Arg Pro Pro Leu Gly Ile Leu Arg Phe Ala Pro Pro Glu Pro  
 125 130 135

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Pro | Trp | Lys | Gly | Ile | Arg | Asp | Ala | Thr | Thr | Tyr | Pro | Pro | 140 | 145 | 150 |
| Gly | Trp | Ser | Leu | Ala | Leu | Ser | Pro | Gly | Trp | Ser | Ala | Val | Ala | Arg | 155 | 160 | 165 |
| Ser | Arg | Leu | Thr | Ala | Thr | Ser | Ala | Ser | Arg | Val | Gln | Ala | Ser | Leu | 170 | 175 | 180 |
| Leu | Pro | Gln | Pro | Leu | Ser | Val | Trp | Gly | Tyr | Arg | Cys | Leu | Gln | Glu | 185 | 190 | 195 |
| Ser | Trp | Gly | Gln | Leu | Ala | Ser | Met | Tyr | Val | Ser | Thr | Arg | Glu | Arg | 200 | 205 | 210 |
| Tyr | Lys | Trp | Leu | Arg | Phe | Ser | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Val | 215 | 220 | 225 |
| Tyr | Ala | Pro | Ala | Arg | Ala | Pro | Gly | Asp | Pro | Gln | Leu | Pro | Val | Met | 230 | 235 | 240 |
| Val | Trp | Phe | Pro | Gly | Gly | Ala | Phe | Ile | Val | Gly | Ala | Ala | Ser | Ser | 245 | 250 | 255 |
| Tyr | Glu | Gly | Ser | Asp | Leu | Ala | Ala | Arg | Glu | Lys | Val | Val | Leu | Val | 260 | 265 | 270 |
| Phe | Leu | Gln | His | Arg | Leu | Gly | Ile | Phe | Gly | Phe | Leu | Ser | Thr | Asp | 275 | 280 | 285 |
| Asp | Ser | His | Ala | Arg | Gly | Asn | Trp | Gly | Leu | Leu | Asp | Gln | Met | Ala | 290 | 295 | 300 |
| Ala | Leu | Arg | Trp | Val | Gln | Glu | Asn | Ile | Ala | Ala | Phe | Gly | Gly | Asp | 305 | 310 | 315 |
| Pro | Gly | Asn | Val | Thr | Leu | Phe | Gly | Gln | Ser | Ala | Gly | Ala | Met | Ser | 320 | 325 | 330 |
| Ile | Ser | Gly | Leu | Met | Met | Ser | Pro | Leu | Ala | Ser | Gly | Leu | Phe | His | 335 | 340 | 345 |
| Arg | Ala | Ile | Ser | Gln | Ser | Gly | Thr | Ala | Leu | Phe | Arg | Leu | Phe | Ile | 350 | 355 | 360 |
| Thr | Ser | Asn | Pro | Leu | Lys | Val | Ala | Lys | Lys | Val | Ala | His | Leu | Ala | 365 | 370 | 375 |
| Gly | Cys | Asn | His | Asn | Ser | Thr | Gln | Ile | Leu | Val | Asn | Cys | Leu | Arg | 380 | 385 | 390 |
| Ala | Leu | Ser | Gly | Thr | Lys | Val | Met | Arg | Val | Ser | Asn | Lys | Met | Arg | 395 | 400 | 405 |
| Phe | Leu | Gln | Leu | Asn | Phe | Gln | Arg | Asp | Pro | Glu | Glu | Ile | Ile | Trp | 410 | 415 | 420 |
| Ser | Met | Ser | Pro | Val | Val | Asp | Gly | Val | Val | Ile | Pro | Asp | Asp | Pro |     |     |     |



|   |     |     |
|---|-----|-----|
| 425   | 430 | 435 |
| Leu Val Leu Leu Thr Gln Gly Lys Val Ser Ser Val Pro Tyr Leu |     |     |
| 440   | 445 | 450 |
| Leu Gly Val Asn Asn Leu Glu Phe Asn Trp Leu Leu Pro Tyr Asn |     |     |
| 455   | 460 | 465 |
| Ile Thr Lys Glu Gln Val Pro Leu Val Val Glu Glu Tyr Leu Asp |     |     |
| 470   | 475 | 480 |
| Asn Val Asn Glu His Asp Trp Lys Met Leu Arg Asn Arg Met Met |     |     |
| 485   | 490 | 495 |
| Asp Ile Val Gln Asp Ala Thr Phe Val Tyr Ala Thr Leu Gln Thr |     |     |
| 500   | 505 | 510 |
| Ala His Tyr His Arg Glu Thr Pro Met Met Gly Ile Cys Pro Ala |     |     |
| 515   | 520 | 525 |
| Gly His Ala Thr Thr Arg Met Lys Ser Thr Cys Ser Trp Ile Leu |     |     |
| 530   | 535 | 540 |
| Pro Gln Glu Trp Ala   |     |     |
| 545   |     |     |

<210> 255  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 255  
aggtgcctgc aggagtcctg ggg 23

<210> 256  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 256  
ccacctcagg aagccgaaga tgcc 24

<210> 257  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 257  
gaacggtaca agtggctgcg cttcagcgag gactgtctgt acctg 45

<210> 258  
<211> 2764  
<212> DNA  
<213> Homo sapiens

<400> 258  
gagaacaggc ctgtctcagg caggccctgc gcctcctatg cggagatgct 50  
actgccactg ctgctgtcct cgctgctggg cgggtcccag gctatggatg 100  
ggagattctg gatacgagtg caggagtcag tgatgggtgcc ggagggcctg 150  
tgcatctctg tgccctgctc tttctcctac ccccgacaag actggacagg 200  
gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250  
aggggtgctcc tgtggccaca aaccaccaga gtcgagaggt ggaaatgagc 300  
acccgggggcc gattccagct cactggggat cccgccaagg ggaactgctc 350  
cttggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400  
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tttctaaaag taacagtgtc cagcttcacg cccagacccc aggaccacaa 500  
caccgacctc acctgccatg tggacttctc cagaaagggg gtgagcgcac 550  
agaggaccgt ccgactccgt gtggcctatg ccccagaga ccttgttatc 600  
agcatttcac gtgacaacac gccagccctg gagccccagc cccagggaaa 650  
tgtcccatc ctggaagccc aaaaaggcca gttcctgcgg ctctctctgtg 700  
ctgctgacag ccagccccct gccacactga gctgggtcct gcagaacaga 750  
gtcctctcct cgtcccatcc ctggggccct agaccctgg ggctggagct 800  
gcccgggggtg aaggctgggg attcagggcg ctacacctgc cgagcggaga 850  
acaggcttgg ctcccagcag cgagccctgg acctctctgt gcagtatcct 900  
ccagagaacc tgagagtgat ggtttcccaa gcaaacagga cagtccctgga 950  
aaaccttggg aacggcacgt ctctcccagt actggagggc caaagcctgt 1000  
gcctgggtctg tgtcacacac agcagcccc cagccaggct gagctggacc 1050  
cagaggggac aggttctgag cccctcccag ccctcagacc ccggggtcct 1100  
ggagctgcct cgggttcaag tggagcacga aggagagttc acctgccacg 1150  
ctcggcaccc actgggtcct cagcaogtct ctctcagcct ctccgtgcac 1200  
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aatcggcatc acggctcttc ttttctctg cctggccctg atcatcatga 1300

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agattctacc gaagagacgg actcagacag aaaccccgag gccaggttc 1350  
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 cccctggct cagaagcgga atcagaaagc cacaccaaac agtcctcgga 1450  
 cccctcctcc accaggtgct ccctccccag aatcaaagaa gaaccagaaa 1500  
 aagcagtatc agttgccag tttccagaa cccaaatcat cactcaagc 1550  
 ccagaaatcc caggagagcc aagaggagct ccattatgcc acgctcaact 1600  
 tcccaggcgt cagaccaggg cctgaggccc ggatgccaa gggcaccag 1650  
 gcggattatg cagaagtcaa gttccaatga gggctcttta ggcttttagga 1700  
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 tcgggagttc gagaccagcc tggccaactt ggtgaaacc cgtctctact 1950  
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 cccagcactt tgggaggcta aggtgggtgg attgcttgag cccaggagtt 2200  
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 cccaaaaggg ggaggaatga ataatccacc ccttgtttag caaataagca 2650  
 agaaataacc ataaaagtgg gcaaccagca gctctaggcg ctgctcttgt 2700  
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tcaccttaaa aaaa 2764

<210> 259

<211> 544

<212> PRT

<213> Homo sapiens

<400> 259

Met Leu Leu Pro Leu Leu Leu Ser Ser Leu Leu Gly Gly Ser Gln  
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Ala Met Asp Gly Arg Phe Trp Ile Arg Val Gln Glu Ser Val Met  
20 25 30  
Val Pro Glu Gly Leu Cys Ile Ser Val Pro Cys Ser Phe Ser Tyr  
35 40 45  
Pro Arg Gln Asp Trp Thr Gly Ser Thr Pro Ala Tyr Gly Tyr Trp  
50 55 60  
Phe Lys Ala Val Thr Glu Thr Thr Lys Gly Ala Pro Val Ala Thr  
65 70 75  
Asn His Gln Ser Arg Glu Val Glu Met Ser Thr Arg Gly Arg Phe  
80 85 90  
Gln Leu Thr Gly Asp Pro Ala Lys Gly Asn Cys Ser Leu Val Ile  
95 100 105  
Arg Asp Ala Gln Met Gln Asp Glu Ser Gln Tyr Phe Phe Arg Val  
110 115 120  
Glu Arg Gly Ser Tyr Val Thr Tyr Asn Phe Met Asn Asp Gly Phe  
125 130 135  
Phe Leu Lys Val Thr Val Leu Ser Phe Thr Pro Arg Pro Gln Asp  
140 145 150  
His Asn Thr Asp Leu Thr Cys His Val Asp Phe Ser Arg Lys Gly  
155 160 165  
Val Ser Ala Gln Arg Thr Val Arg Leu Arg Val Ala Tyr Ala Pro  
170 175 180  
Arg Asp Leu Val Ile Ser Ile Ser Arg Asp Asn Thr Pro Ala Leu  
185 190 195  
Glu Pro Gln Pro Gln Gly Asn Val Pro Tyr Leu Glu Ala Gln Lys  
200 205 210  
Gly Gln Phe Leu Arg Leu Leu Cys Ala Ala Asp Ser Gln Pro Pro  
215 220 225  
Ala Thr Leu Ser Trp Val Leu Gln Asn Arg Val Leu Ser Ser Ser  
230 235 240  
His Pro Trp Gly Pro Arg Pro Leu Gly Leu Glu Leu Pro Gly Val  
245 250 255

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|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Lys Ala Gly Asp | Ser Gly Arg Tyr Thr | Cys Arg Ala Glu Asn Arg |
| 260             | 265                 | 270                     |
| Leu Gly Ser Gln | Gln Arg Ala Leu Asp | Leu Ser Val Gln Tyr Pro |
| 275             | 280                 | 285                     |
| Pro Glu Asn Leu | Arg Val Met Val Ser | Gln Ala Asn Arg Thr Val |
| 290             | 295                 | 300                     |
| Leu Glu Asn Leu | Gly Asn Gly Thr Ser | Leu Pro Val Leu Glu Gly |
| 305             | 310                 | 315                     |
| Gln Ser Leu Cys | Leu Val Cys Val Thr | His Ser Ser Pro Pro Ala |
| 320             | 325                 | 330                     |
| Arg Leu Ser Trp | Thr Gln Arg Gly Gln | Val Leu Ser Pro Ser Gln |
| 335             | 340                 | 345                     |
| Pro Ser Asp Pro | Gly Val Leu Glu Leu | Pro Arg Val Gln Val Glu |
| 350             | 355                 | 360                     |
| His Glu Gly Glu | Phe Thr Cys His Ala | Arg His Pro Leu Gly Ser |
| 365             | 370                 | 375                     |
| Gln His Val Ser | Leu Ser Leu Ser Val | His Tyr Lys Lys Gly Leu |
| 380             | 385                 | 390                     |
| Ile Ser Thr Ala | Phe Ser Asn Gly Ala | Phe Leu Gly Ile Gly Ile |
| 395             | 400                 | 405                     |
| Thr Ala Leu Leu | Phe Leu Cys Leu Ala | Leu Ile Ile Met Lys Ile |
| 410             | 415                 | 420                     |
| Leu Pro Lys Arg | Arg Thr Gln Thr Glu | Thr Pro Arg Pro Arg Phe |
| 425             | 430                 | 435                     |
| Ser Arg His Ser | Thr Ile Leu Asp Tyr | Ile Asn Val Val Pro Thr |
| 440             | 445                 | 450                     |
| Ala Gly Pro Leu | Ala Gln Lys Arg Asn | Gln Lys Ala Thr Pro Asn |
| 455             | 460                 | 465                     |
| Ser Pro Arg Thr | Pro Pro Pro Gly     | Ala Pro Ser Pro Glu Ser |
| 470             | 475                 | 480                     |
| Lys Lys Asn Gln | Lys Lys Gln Tyr Gln | Leu Pro Ser Phe Pro Glu |
| 485             | 490                 | 495                     |
| Pro Lys Ser Ser | Thr Gln Ala Pro Glu | Ser Gln Glu Ser Gln Glu |
| 500             | 505                 | 510                     |
| Glu Leu His Tyr | Ala Thr Leu Asn Phe | Pro Gly Val Arg Pro Arg |
| 515             | 520                 | 525                     |
| Pro Glu Ala Arg | Met Pro Lys Gly Thr | Gln Ala Asp Tyr Ala Glu |
| 530             | 535                 | 540                     |
| Val Lys Phe Gln |                     |                         |

<210> 260  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 260  
 caaagcctgc gcctggtctg tg 22

<210> 261  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 261  
 ttctggagcc cagaggggtgc tgag 24

<210> 262  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 262  
 ggagctgcca ccattcaaa tggagcacga aggagagttc acctg 45

<210> 263  
 <211> 2857  
 <212> DNA  
 <213> Homo sapiens

<400> 263  
 tgaagagtaa tagttggaat caaaagagtc aacgcaatga actgttattt 50  
 actgctgcgt tttatgttg gaattcctct cctatggcct tgtcttgag 100  
 caacagaaaa ctctcaaaa aagaaagtca agcagccagt gcgatctcat 150  
 ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200  
 aatgaatacg actagtcac acatcggcc gctaagatct gatttagaca 250  
 atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300  
 acttttatca ttgatgaaag aacaggtgac atatatgcc tacagaagct 350  
 tgatagagag gagcgatccc tctacatctt aagagcccag gtaatagaca 400  
 tcgctactgg aagggtgtg gaacctgagt ctgagtttgt catcaaagtt 450

tcggatatca atgacaatga accaaaaattc ctagatgaac cttatgaggc 500  
cattgtacca gagatgtctc cagaaggaac attagttatc caggtgacag 550  
caagtgatgc tgacgatccc tcaagtggta ataatgctcg tctcctctac 600  
agcttacttc aaggccagcc atatttttct gttgaaccaa caacaggagt 650  
cataagaata tcttctaaaa tggatagaga actgcaagat gagtattggg 700  
taatcattca agccaaggac atgattggtc agccaggagc gttgtctgga 750  
acaacaagtg tattaattaa actttcagat gttaatgaca ataagcctat 800  
atttaaagaa agtttatacc gcttgactgt ctctgaatct gcacccactg 850  
ggacttctat aggaacaatc atggcatatg ataatgacat aggagagaat 900  
gcagaaatgg attacagcat tgaagaggat gattcgcaaa catttgacat 950  
tattactaat catgaaactc aagaaggaat agttatatta aaaaagaaag 1000  
tggattttga gcaccagaac cactacggta ttagagcaaa agttaaaaac 1050  
catcatgttc ctgagcagct catgaagtac cacactgagg cttccaccac 1100  
tttcattaag atccagggtg aagatgttga tgagcctcct cttttcctcc 1150  
ttocatatta tgtatttgaa gtttttgaag aaaccccaca gggatcattt 1200  
gtaggcgtgg tgtctgccac agaccagac aataggaaat ctctatcag 1250  
gtattctatt actaggagca aagtgttcaa tatcaatgat aatggtacaa 1300  
tcactacaag taactcactg gatcgtgaaa tcagtgcttg gtacaaccta 1350  
agtattacag ccacagaaaa atacaatata gaacagatct cttcgatccc 1400  
actgtatgtg caagttctta acatcaatga tcatgctcct gagttctctc 1450  
aatactatga gacttatgtt tgtgaaaatg caggctctgg tcaggtaatt 1500  
cagactatca gtgcagtgga tagagatgaa tccatagaag agcaccattt 1550  
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tagataatca agataacaca gctgtcattt tgactaatag aactgggtttt 1650  
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ctttocatgg gattcaagac agaagttatc attgctattc tcatttgcac 1850  
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gaaaacagat tctatttcct gagaaaagtg aagatttcag agagaatata 1950  
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 aatgtaggaa gatattaaaa gtagatgaga ggacacaaga tgtagtcgat 2650  
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 cgagaaaatt taaaggagca aaaatttgca agtcaaataa aaatgtacaa 2750  
 atcgagataa catttacatt tctatcatat tgacatgaaa attgaaaatg 2800  
 tatagtcaga gaaattttca tgaattattc catgaagtat tgtttccttt 2850  
 atttaaa 2857

<210> 264

<211> 772

<212> PRT

<213> Homo sapiens

<400> 264

Met Asn Cys Tyr Leu Leu Leu Arg Phe Met Leu Gly Ile Pro Leu  
 1 5 10 15

Leu Trp Pro Cys Leu Gly Ala Thr Glu Asn Ser Gln Thr Lys Lys  
 20 25 30

Val Lys Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp  
 35 40 45

Val Trp Asn Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser  
 50 55 60



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|   |     |     |     |
|---|-----|-----|-----|
| His His Ile Gly Gln Leu Arg Ser Asp Leu Asp Asn Gly Asn Asn | 65  | 70  | 75  |
| Ser Phe Gln Tyr Lys Leu Leu Gly Ala Gly Ala Gly Ser Thr Phe | 80  | 85  | 90  |
| Ile Ile Asp Glu Arg Thr Gly Asp Ile Tyr Ala Ile Gln Lys Leu | 95  | 100 | 105 |
| Asp Arg Glu Glu Arg Ser Leu Tyr Ile Leu Arg Ala Gln Val Ile | 110 | 115 | 120 |
| Asp Ile Ala Thr Gly Arg Ala Val Glu Pro Glu Ser Glu Phe Val | 125 | 130 | 135 |
| Ile Lys Val Ser Asp Ile Asn Asp Asn Glu Pro Lys Phe Leu Asp | 140 | 145 | 150 |
| Glu Pro Tyr Glu Ala Ile Val Pro Glu Met Ser Pro Glu Gly Thr | 155 | 160 | 165 |
| Leu Val Ile Gln Val Thr Ala Ser Asp Ala Asp Asp Pro Ser Ser | 170 | 175 | 180 |
| Gly Asn Asn Ala Arg Leu Leu Tyr Ser Leu Leu Gln Gly Gln Pro | 185 | 190 | 195 |
| Tyr Phe Ser Val Glu Pro Thr Thr Gly Val Ile Arg Ile Ser Ser | 200 | 205 | 210 |
| Lys Met Asp Arg Glu Leu Gln Asp Glu Tyr Trp Val Ile Ile Gln | 215 | 220 | 225 |
| Ala Lys Asp Met Ile Gly Gln Pro Gly Ala Leu Ser Gly Thr Thr | 230 | 235 | 240 |
| Ser Val Leu Ile Lys Leu Ser Asp Val Asn Asp Asn Lys Pro Ile | 245 | 250 | 255 |
| Phe Lys Glu Ser Leu Tyr Arg Leu Thr Val Ser Glu Ser Ala Pro | 260 | 265 | 270 |
| Thr Gly Thr Ser Ile Gly Thr Ile Met Ala Tyr Asp Asn Asp Ile | 275 | 280 | 285 |
| Gly Glu Asn Ala Glu Met Asp Tyr Ser Ile Glu Glu Asp Asp Ser | 290 | 295 | 300 |
| Gln Thr Phe Asp Ile Ile Thr Asn His Glu Thr Gln Glu Gly Ile | 305 | 310 | 315 |
| Val Ile Leu Lys Lys Lys Val Asp Phe Glu His Gln Asn His Tyr | 320 | 325 | 330 |
| Gly Ile Arg Ala Lys Val Lys Asn His His Val Pro Glu Gln Leu | 335 | 340 | 345 |
| Met Lys Tyr His Thr Glu Ala Ser Thr Thr Phe Ile Lys Ile Gln |     |     |     |

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|                 |   |     |
|-----------------|---|-----|
| 350             | 355   | 360 |
| Val Glu Asp Val | Asp Glu Pro Pro Leu Phe Leu Leu Pro Tyr Tyr |     |
| 365             | 370   | 375 |
| Val Phe Glu Val | Phe Glu Glu Thr Pro Gln Gly Ser Phe Val Gly |     |
| 380             | 385   | 390 |
| Val Val Ser Ala | Thr Asp Pro Asp Asn Arg Lys Ser Pro Ile Arg |     |
| 395             | 400   | 405 |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe Asn Ile Asn Asp Asn Gly |     |
| 410             | 415   | 420 |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp Arg Glu Ile Ser Ala Trp |     |
| 425             | 430   | 435 |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu Lys Tyr Asn Ile Glu Gln |     |
| 440             | 445   | 450 |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln Val Leu Asn Ile Asn Asp |     |
| 455             | 460   | 465 |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr Glu Thr Tyr Val Cys Glu |     |
| 470             | 475   | 480 |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln Thr Ile Ser Ala Val Asp |     |
| 485             | 490   | 495 |
| Arg Asp Glu Ser | Ile Glu Glu His His Phe Tyr Phe Asn Leu Ser |     |
| 500             | 505   | 510 |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe Thr Ile Ile Asp Asn Gln |     |
| 515             | 520   | 525 |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn Arg Thr Gly Phe Asn Leu |     |
| 530             | 535   | 540 |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser Ile Leu Ile Ala Asp Asn |     |
| 545             | 550   | 555 |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn Thr Leu Thr Ile His Val |     |
| 560             | 565   | 570 |
| Cys Asp Cys Gly | Asp Ser Gly Ser Thr Gln Thr Cys Gln Tyr Gln |     |
| 575             | 580   | 585 |
| Glu Leu Val Leu | Ser Met Gly Phe Lys Thr Glu Val Ile Ile Ala |     |
| 590             | 595   | 600 |
| Ile Leu Ile Cys | Ile Met Ile Ile Phe Gly Phe Ile Phe Leu Thr |     |
| 605             | 610   | 615 |
| Leu Gly Leu Lys | Gln Arg Arg Lys Gln Ile Leu Phe Pro Glu Lys |     |
| 620             | 625   | 630 |
| Ser Glu Asp Phe | Arg Glu Asn Ile Phe Gln Tyr Asp Asp Glu Gly |     |
| 635             | 640   | 645 |

Gly Gly Glu Glu Asp Thr Glu Ala Phe Asp Ile Ala Glu Leu Arg  
 650 655 660  
 Ser Ser Thr Ile Met Arg Glu Arg Lys Thr Arg Lys Thr Thr Ser  
 665 670 675  
 Ala Glu Ile Arg Ser Leu Tyr Arg Gln Ser Leu Gln Val Gly Pro  
 680 685 690  
 Asp Ser Ala Ile Phe Arg Lys Phe Ile Leu Glu Lys Leu Glu Glu  
 695 700 705  
 Ala Asn Thr Asp Pro Cys Ala Pro Pro Phe Asp Ser Leu Gln Thr  
 710 715 720  
 Tyr Ala Phe Glu Gly Thr Gly Ser Leu Ala Gly Ser Leu Ser Ser  
 725 730 735  
 Leu Glu Ser Ala Val Ser Asp Gln Asp Glu Ser Tyr Asp Tyr Leu  
 740 745 750  
 Asn Glu Leu Gly Pro Arg Phe Lys Arg Leu Ala Cys Met Phe Gly  
 755 760 765  
 Ser Ala Val Gln Ser Asn Asn  
 770

<210> 265  
 <211> 349  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 24, 60, 141, 226, 228, 249, 252  
 <223> unknown base

<400> 265  
 atttcaaggc cagccatatt tttntgttga accaacaaca ggagtcataa 50  
 gaatatttttn taaaatggat agagaactgc aagatgagta ttgggtaatc 100  
 attcaagcca aggacatgat tggtcagcca ggagcgttgt ntggaacaac 150  
 aagtgtatta attaaacttt cagatgttaa tgacaataag cctatattta 200  
 aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250  
 tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300  
 aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 266

cttgactgtc tctgaatctg caccc 25

<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

aagtgggtgga agcctccagt gtgg 24

<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

ccactacggt attagagcaa aagttaaaaa ccatcatggt tcctggagca 50

gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

gcaacctcag cttctagtat ccagactcca gcgcgcgcccc gggcgcgagac 50

cccaaccccg acccagagct tctccagcgg cggcgcagcg agcagggctc 100

ccgccttaa cttcctccgc ggggccagc caccttcggg agtccgggtt 150

gccacctgc aaactctccg cttctgcac ctgccacccc tgagccagcg 200

cgggcccccg agcgagtcag ggccaacgcg gggctgcagc tgttgggctt 250

cattctcgcc ttcctgggat ggatcggcgc catcgtcagc actgccctgc 300

cccagtggag gatttactcc tatgccggcg acaacatcgt gaccgcccag 350

gcatgtacg aggggctgtg gatgtcctgc gtgtcgcaga gcaccgggca 400

gatccagtgc aaagtctttg actccttgct gaatctgagc agcacattgc 450

aagcaacccg tgccttgatg gtggttgcca tcctcctggg agtgatagca 500

atctttgtgg ccaccgttg catgaagtgt atgaagtgc tggaagacga 550

tgagggtgcag aagatgagga tggctgtcat tgggggtgcg atatttcttc 600

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ttgcaggctt ggctatttta gttgccacag catggtatgg caatagaatc 650  
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 tggtcaggct ctcttcaactg gctgggctgc tgcttctctc tgccttctgg 750  
 gaggtgccct actttgctgt tctgtcccc gaaaaacaac ctcttaccca 800  
 acaccaaggc cctatccaaa acctgcacct tccagcgga aagactacgt 850  
 gtgacacaga ggcaaaagga gaaaatcatg ttgaaacaaa ccgaaaatgg 900  
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 aatctgaagt atggtattac aaaacaaaca aacaaacaaa aaacccatgt 1000  
 gttaaaatac tcagtgcata acatggctta atcttattth atcttctttc 1050  
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 gtaatcatat tcaaatgggg gaaggggtgc tcttaaata tatatagata 1150  
 tgtatatata catgtttttc tattaataat agacagtaaa atactattct 1200  
 cattatgttg atactagcat acttaaaata tctctaaaat aggtaaatgt 1250  
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 ccttatatac atatgtaaca gtcaaatatc atttactctt cttcattagc 1350  
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 tctttctgca tgaccaaagt gataaattcc tgttgacctt cccacacaat 1650  
 ccctgtactc tgacccatag cactcttggt tgctttgaaa atatttgtcc 1700  
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 gattgaattt ttaagctact tattcatagt tttatattcc cctaaactac 1800  
 ctttttgttc cccattcctt aattgtattg ttttccaag tgtaattatc 1850  
 atgcgtttta tatcttcta ataagggtgt gtctgtttgt ctgaacaaag 1900  
 tgctagactt tctggagtga taatctggtg acaaatattc tctctgtagc 1950  
 tgtaagcaag tcaactaatc tttctacctc tttttctat ctgccaaatt 2000  
 gagataatga tacttaacca gttagaagag gtagtgtgaa tattaattag 2050

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tttatattac tcttattcct tgaacatgaa ctatgcctat gtagtgtctt 2100  
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 acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctattt 2200  
 ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250  
 ctctctacca gtctatttcc actgaacaaa acctacgcac ataccttcat 2300  
 gtggctcagt gccttcctct ctctaccagt ctatttccat tctttcagct 2350  
 gtgtctgaca tgtttgtgct ctgttccatt ttaacaactg ctcttacttt 2400  
 tccagtctgt acagaatgct atttcacttg agcaagatga tgtaatggaa 2450  
 aggggtgttg cactggtgtc tggagacctg gatttgagtc ttggtgctat 2500  
 caatcacctg ctgtgtttga gcaaggcatt tggctgctgt aagcttattg 2550  
 cttcatctgt aagcgggtgt ttgtaattcc tgatcttccc acctcacagt 2600  
 gatgttggtg ggatccagtg agatagaata catgtaagtg tggttttgta 2650  
 atttaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700  
 gttttggtgt tgcttttcaa atgtttgaaa ataaaaaaaa tgtaag 2747

<210> 270  
 <211> 211  
 <212> PRT  
 <213> Homo sapiens

<400> 270  
 Met Ala Asn Ala Gly Leu Gln Leu Leu Gly Phe Ile Leu Ala Phe  
 1 5 10 15  
 Leu Gly Trp Ile Gly Ala Ile Val Ser Thr Ala Leu Pro Gln Trp  
 20 25 30  
 Arg Ile Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala  
 35 40 45  
 Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly  
 50 55 60  
 Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser  
 65 70 75  
 Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu  
 80 85 90  
 Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met  
 95 100 105  
 Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val  
 110 115 120

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Gly | Ala | Ile | Phe | Leu | Leu | Ala | Gly | Leu | Ala | Ile | Leu | Val |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Ala | Thr | Ala | Trp | Tyr | Gly | Asn | Arg | Ile | Val | Gln | Glu | Phe | Tyr | Asp |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Pro | Met | Thr | Pro | Val | Asn | Ala | Arg | Tyr | Glu | Phe | Gly | Gln | Ala | Leu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Phe | Thr | Gly | Trp | Ala | Ala | Ala | Ser | Leu | Cys | Leu | Leu | Gly | Gly | Ala |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Leu | Leu | Cys | Cys | Ser | Cys | Pro | Arg | Lys | Thr | Thr | Ser | Tyr | Pro | Thr |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Pro | Arg | Pro | Tyr | Pro | Lys | Pro | Ala | Pro | Ser | Ser | Gly | Lys | Asp | Tyr |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

Val

<210> 271  
 <211> 564  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 21, 69, 163, 434, 436, 444  
 <223> unknown base

<400> 271  
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 ggatggatcg ggcgatcnt cacactgccc ttccccagtg gaggatttta 100  
 ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150  
 ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200  
 ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250  
 tgatgggtgt tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300  
 gttggcatga agtgtatgaa gtgcttggaa gacgatgagg tgcagaagat 350  
 gaggatggct gtcattgggg gcgcatatt tcttcttgca ggtctggcta 400  
 ttttagttgc cacagcatgg tatggcaata gaancnttca acanttctat 450  
 gaccctatga cccagtcaa tgccaggtac gaatttggtc aggctctctt 500  
 cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550  
 gctgttcttg tccc 564

<210> 272  
 <211> 498

<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341  
<223> unknown base

<400> 272  
acccttgacc caacgcggcc ccccgaccgn ttcattggcca aacgcgggnc 50  
tccagctggt gggcttcatt ctccccttcc tgggatggac cggcgcccat 100  
cntcagcact gccctgcccc agtggaggat ttactcctat nccggcnaca 150  
acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtcctgcgtg 200  
tcgcagagca cggggcagat ccagtgcaaa gtctttgact cccttgctga 250  
atctgagcag cacattgcaa gcaacccgtg ccttgatggt ggttggcatc 300  
ctcctgggag tgatagcaat cttnttggcc accgttgtnn ntgaagtgtg 350  
tgaagtgcct ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400  
gggggcgcga tatttcttct tgcaggtctg gctatttttag ttgccacagc 450  
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273  
<211> 552  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394  
<223> unknown base

<400> 273  
gggcccgacc attatccaac cgggntcaact gttggctcat ctccctcctg 50  
gatgaanogc gccatcntca gactccctgc cccatggaga tttnnccat 100  
gctggcgaca acatcntgac cccagccat gtacgagggg ctttgaacgt 150  
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200  
tgctgaatct gngcagcaca ttgcagcaac cntgcccctg atggtgggtg 250  
gcactcctct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300  
tgtatgaagt gcttgaaga cgatgaggtg cagaagatga ggatggctgt 350  
cattgggggc gcgatatttc ttcttgacag tctggctatt tnnngttgcc 400  
acagcatggt atggcaatag aatcgttcaa gaattctatg accctatgac 450



cccagtcatt gccaggtacg aatttgggtca ggctctcttc actgggtggg 500  
 ctgctgcttc tctctgcctt ctgggaggtg cctactttg ctgttcctgc 550  
 ga 552

<210> 274  
 <211> 526  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407  
 <223> unknown base

<400> 274  
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 tggaggattn actcctatgc tggcgacaac atcgtgaccc cccaggccat 100  
 ttaccgaggg gctttggatg tcntgcntgt cgcagagcac cgggcagatc 150  
 ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200  
 caaccgtgc cttgatgggg ttggcatcct cctgggagtg atagcaacct 250  
 ttgtggccac cgttggcatg aagtgtatga agtgcttgga agacgatgag 300  
 gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttggtg 350  
 caggtctggc tatttttagtn gccacagcat ggtatggcaa tagantnntt 400  
 cnngnntct atgaccctat gacccagtc aatgccaggt acgaatttgg 450  
 tcaggtcttc ttcactggct gggctgctgc ttctctctgc cttctgggag 500  
 gtgccctact ttgctgttcc tgtccc 526

<210> 275  
 <211> 398  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274  
 <223> unknown base

<400> 275  
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 gcagcacatt ncaagcaacc ccttgacctg aagtggttg ncatcccccc 100  
 tgggagtgaa tagcaatctt tgtggccacc gttggcatga agtntatgaa 150  
 gtgcttgga gacgatgagg tgcagaagat gaggatggct gtcattgggg 200

gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250  
 tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtcaa 300  
 tgccaggtac gaatttggtc aggctctctt cactggctgg gctgctgctt 350  
 ctctctgcct tctgggaggt gccctacttt gctgttcctg tccccgaa 398

<210> 276  
 <211> 495  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476  
 <223> unknown base

<400> 276  
 agcaatgccc tgccccaggt ggaggattaa ttcctatgnt ggggacaaca 50  
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 cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150  
 gagcagcaca ttgcaagcaa cccgtgcctt gatggtggtt ggcattcttc 200  
 tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250  
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 cgcgatattt cttnttgacg gtctggctat tttagttgcc acagcatggt 350  
 atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400  
 gccaggtacg aatttgggtc ggctttnttc actggctggg ctgctgcttn 450  
 tttctgcctt ntgggaggtg ccctantttg ctgttcctgc gaacc 495

<210> 277  
 <211> 200  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 34, 87, 138, 147, 163, 165-166, 172  
 <223> unknown base

<400> 277  
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 cacagcatgg tatggcaata gaatcgttca agaattntat gaccctatga 100  
 cccagtcaa tgccaggtac gaatttggtc aggctctntt cactggntgg 150  
 gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcctg 200

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<210> 278  
 <211> 542  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 26, 43, 55, 77, 198, 361-362, 391-392, 396  
 <223> unknown base

<400> 278  
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 gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgc 150  
 aagtctttga ctcccttgctg aatctgagca gcacattgca agcaacntg 200  
 ccttgatggg ggttggcatc ctccctgggag tgatagcaat ctttgtggcc 250  
 accgttggca tgaagtgta tgaagtgctt ggaagacgat gaggtgcaga 300  
 agatgaggat ggctgtcatt gggggcgcga tatttcttct tgcaggtctg 350  
 gctatttttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400  
 tctatgaccc tatgacccca gtcaatgcca ggtacgaatt tggtcaggct 450  
 ctcttcactg gctgggctgc tgcttctctc tgcttcttg gaggtgccct 500  
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<210> 279  
 <211> 548  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 90, 115, 147, 228, 387  
 <223> unknown base

<400> 279  
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 acaacatcgt gacncccag gccatgtacg aggggctgtg gatgtongcg 150  
 tgtcgcagag caccgggcag atccagtgc aagtctttga ctcccttgctg 200  
 aatctgagca gcacattgca agcaacntg ccttgatggg ggttggcatc 250  
 ctccctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300  
 gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350

ggggcgcgat atttcttctt gcaggtctgg ctatttntag ttgccacagc 400  
 atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450  
 tcaatgccag gtacgaattt ggtcaggctc tcttactgg ctgggctgct 500  
 gcttctctct gccttctggg aggtgcccta ctttgctgtt cctgcgaa 548

<210> 280  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 280  
 cgagcgagtc atggccaacg c 21

<210> 281  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 281  
 gtgtcacacg tagtctttcc cgctgg 26

<210> 282  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 282  
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<210> 283  
 <211> 2285  
 <212> DNA  
 <213> Homo sapiens

<400> 283  
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 ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccaccccg 100  
 tagaggaccc ccgcccgtgc cccgaccggt ccccgcttt ttgtaaaact 150  
 taaagcgggc gcagcattaa cgcttccgc cccggtgacc tctcaggggt 200  
 ctccccgcca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250  
 ggtcctgagc ctgcagccgc agcacgagct caaattccga ggtcccttca 300

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ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350  
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caacagcgga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450  
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500  
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gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600  
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tctgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750  
gtaagaggct gcaaggtgaa gttcagaggc tacgggagga gaacaagcag 800  
ttcaaggaag aagatggact gcgggatgagg aagacagtgc agagcaacag 850  
ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcacc 900  
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aagattgcct tgtagaggta gcatgcacag gatggtaaat tggattggtg 1000  
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050  
aattaatgta tgatgacatc tcacaggctt tgcctttaa ttacccctcc 1100  
ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150  
ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200  
ctttattaat gacaaggga accatgagta atgccacaat ggcattattg 1250  
aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300  
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acgtggccca ctcccgccc aggtgtcttt ccgtgtcttc agttctgtcc 1450  
aagccatcag ctcttgga ctgatgaaca gagtcaaga cccaaaggaa 1500  
ttgactgtg gcagcatcag acgtactcgt cataagtga aggcgtgtgt 1550  
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taaagggacc aagctaaatt tgtattggt catgtagtga agtcaaactg 1650  
ttattcagag atgtttaatg catatttaac ttatttaatg tatttcatct 1700  
catgttttct tattgtcaca agagtacagt taatgctgcg tgctgctgaa 1750

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tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000  
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gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150  
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atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250  
agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284  
<211> 243  
<212> PRT  
<213> Homo sapiens

<400> 284  
Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu  
1 5 10 15  
Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu  
20 25 30  
Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys  
35 40 45  
Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile  
50 55 60  
Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro  
65 70 75  
Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val  
80 85 90  
Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val  
95 100 105  
Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg  
110 115 120  
Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val  
125 130 135  
Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr  
140 145 150

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Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu  
155 160 165

Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val  
170 175 180

Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly  
185 190 195

Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala  
200 205 210

Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu  
215 220 225

Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys  
230 235 240

Ile Ala Leu

<210> 285  
<211> 418  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 40, 53, 68, 119, 134, 177-178, 255  
<223> unknown base

<400> 285  
gtcagtcttc tagattgtcc ttatcccacc tttcaaccan tactcacatt 50  
tcnagcgccc aggtccangt ctgagcctga cttccccttg gggacctagc 100  
ctggagtcag gacaatggnt cgggctgcag aggnnttagaa gcgagggcac 150  
cagcagtttt ggggtggggag caagggngga gagaaactct tcagcgaatc 200  
cttctagtag tagttgagag tttgactgtg aattaatttt atgccataaa 250  
agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300  
taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350  
ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400  
gttaacttta aaatgagc 418

<210> 286  
<211> 543  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 73, 97

<223> unknown base

<400> 286

tattgtaaag gccattttaa accatttgga ggccttgga catgatgctg 50  
gattacctcc ttaaatagaca ccnttcctcg cctgttggtg ctggccnttg 100  
gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150  
gtccccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200  
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250  
aaggaattgc cactgtggca gcatcagacg tactcgatcat aagtgagagg 300  
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcctt 350  
gttcacttaa agggaccaag cttaaattgta ttggttcatg tagtgaagtc 400  
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450  
tcattctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500  
gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

<210> 287

<211> 270

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

ccctggtggt tttgttcttt aattcgttgg tgtaattntt gggaagattg 50  
cttgtagagg tagnatgcac cnggctgga aattggattg gtggatccac 100  
catatccatg ggattttaaat ttatcataac catgtgtaaa aagaaattaa 150  
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200  
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250  
agttaaaaat gtatagtaac 270

<210> 288

<211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base



<400> 288  
 ggtggcccat tcccggccca ggctgctttc cggntttcag ttctgtccaa 50  
 gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100  
 gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150  
 actgattgac ccagcgcttt ggaaataaat ggcaagtgtt tgttcantta 200  
 aagggaccaa gctaaatttg tattggttca ttagtgaag tcaaactgtt 250  
 attcagagat gtttaatgca tattaantt atttaatgta tttnatntca 300  
 tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350  
 ntgttgggtg aactgggtatt gctgctggag ggctgtgggc tcctctgtct 400  
 ttggagagtc tggatcatgtg gaggtggg 428

<210> 289  
 <211> 320  
 <212> DNA  
 <213> Homo sapiens

<400> 289  
 tgctttccgt gtcttcagtt ctgtccaagc catcagctcc ttgggacttg 50  
 atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100  
 tactcgtcat aagtgaagg cgtgtgttga ctgattgacc cagcgctttg 150  
 gaaataaatg gcagtgtttt gttcacttaa agggaccaag ctaaatttgt 200  
 attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250  
 atttaactta tttaatgtat ttcattctcat gttttcttat tgtcacaaga 300  
 gtacagttaa tgctgcgtgc 320

<210> 290  
 <211> 609  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,  
 447, 481, 513, 532, 584, 598  
 <223> unknown base

<400> 290  
 aaacctttaa aagttgagg gaaaagaatg atcctttatt aatgacaagg 50  
 gaaacntgn gtaatgccac aatggcatat tgtaaattgc attttaaaca 100  
 ttggtaggcc ttggtacatg atgctggatt acctctctta aatgacacc 150  
 cttcctcgcc tgttggtgct ggccottggg gagctngagc ccagcatgct 200

ggggagtgcg gtctgctcca cacagtagtc cccangtggc ccantcccgg 250  
 cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300  
 ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350  
 cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccagc 400  
 gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450  
 atttgattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500  
 atgcatattt aanttattta atgtatttca tntcatgttt tcttattgtc 550  
 acaagggtag agttaatgct gcgtgctgct gaantctggt gggagaantg 600  
 gtattgctg 609

<210> 291  
 <211> 493  
 <212> DNA  
 <213> Homo sapiens

<400> 291  
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 cacagtagtc cccacgtggc ccaactcccgg cccaggctgc tttccgtgtc 100  
 ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150  
 aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200  
 gagaggcgtg tgttgactga ttgaccagc gctttggaaa taaatggcag 250  
 tgctttgttc acttaaaggg accaagctaa atttgattg gttcatgtag 300  
 tgaagtcaaa ctgttattca gagatgttta atgcatattt aacttattta 350  
 atgtatttca tctcatgttt tcttattgtc acaagagtag agttaatgct 400  
 gcgtgctgct gaactctggt gggagaactg gtattgctgc tggagggctg 450  
 tgggctcctc tgtctctgga gagtctggc atgtggaggt ggg 493

<210> 292  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 292  
 gcaccaccgt aggtacttgt gtgaggc 27

<210> 293  
 <211> 23  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 293

aaccaccaga gccaaagagcc ggg 23

<210> 294

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 294

cagcgggaatc atcgatgcag gggcctcaat taatgtatct gtgatgttac 50

<210> 295

<211> 2530

<212> DNA

<213> Homo sapiens

<400> 295

gcgagctccg ggtgctgtgg cccggccttg gcggggcggc ctccggctca 50

ggctggctga gaggtccca gctgcagcgt ccccgccgc ctccctcgga 100

gctctgatct cagctgacag tgcctcgga gaccaaaca gcctggcagg 150

gtctcacttt gttgcccagg ctggagttca gtgccatgat catggtttac 200

tgcagccttg acctcctggg ttcaagcgat cctgctgagt agctgggact 250

acaggacaaa attagaagat caaatggaa aatatgctgc tttggttgat 300

atttttcacc cctgggtgga cctcattga tggatctgaa atggaatggg 350

attttatgtg gcaattgaga aaggtacccc ggattgtcag tgaaaggact 400

ttccatctca ccagccccgc atttgaggca gatgctaaga tgatggtaaa 450

tacagtgtgt ggcacgaat gccagaaaga actcccaact cccagccttt 500

ctgaattgga ggattatctt tcctatgaga ctgtctttga gaatggcacc 550

cgaaccttaa ccagggtgaa agttcaagat ttggttcttg agccgactca 600

aaatatcacc acaaaggag tatctgttag gagaaagaga cagggtgatg 650

gcaccgacag caggttcagc atcttgga aaaggttctt aaccaatttc 700

cctttcagca cagctgtgaa gctttccacg ggctgtagtgc gcattctcat 750

ttcccctcag catgttctaa ctgctgcca ctgtgttcat gatggaaagg 800

actatgtcaa agggagtaaa aagctaagg tagggttgtt gaagatgagg 850

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tccgaagggc tgggcacgag gaggcattggg ggacgctacc ttggactatg 1100  
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gtgggcactt caatgccaa gatatctct tctttacatg gtgatgagtt 1750  
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accttcaaac aggtattata aataacatgt gactccttaa tggacttatt 1850  
ctcagggtcc tactctaaga agaactaat aggatgctgg ttgtgtatta 1900  
aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950  
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cctagtttag aaatagggaa gctgagacat ttaagatct caagttttta 2250  
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 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450  
 tgaggactat aggggtgaatt ctctgattag taattttaga tatgtccttt 2500  
 cctaaaaatg aataaaattt atgaatatga 2530

<210> 296  
 <211> 413  
 <212> PRT  
 <213> Homo sapiens

<400> 296

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp | 1   | 5   | 10  | 15 |
| Thr | Leu | Ile | Asp | Gly | Ser | Glu | Met | Glu | Trp | Asp | Phe | Met | Trp | His | 20  | 25  | 30  |    |
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu | 35  | 40  | 45  |    |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr | 50  | 55  | 60  |    |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu | 65  | 70  | 75  |    |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn | 80  | 85  | 90  |    |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu | 95  | 100 | 105 |    |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg | 110 | 115 | 120 |    |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp | 125 | 130 | 135 |    |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu | 140 | 145 | 150 |    |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu | 155 | 160 | 165 |    |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly | 170 | 175 | 180 |    |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser | 185 | 190 | 195 |    |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala | 200 | 205 | 210 |    |

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|                 |                     |                     |     |
|-----------------|---------------------|---------------------|-----|
| Ser Gly Gly Asp | Gln Arg Glu Gly Thr | Arg Glu His Leu Gln | Glu |
| 215             |                     | 220                 | 225 |
| Arg Ala Lys Gly | Gly Arg Arg Arg Lys | Lys Ser Gly Arg Gly | Gln |
| 230             |                     | 235                 | 240 |
| Arg Ile Ala Glu | Gly Arg Pro Ser Phe | Gln Trp Thr Arg Val | Lys |
| 245             |                     | 250                 | 255 |
| Asn Thr His Ile | Pro Lys Gly Trp Ala | Arg Gly Gly Met Gly | Asp |
| 260             |                     | 265                 | 270 |
| Ala Thr Leu Asp | Tyr Asp Tyr Ala Leu | Leu Glu Leu Lys Arg | Ala |
| 275             |                     | 280                 | 285 |
| His Lys Lys Lys | Tyr Met Glu Leu Gly | Ile Ser Pro Thr Ile | Lys |
| 290             |                     | 295                 | 300 |
| Lys Met Pro Gly | Gly Met Ile His Phe | Ser Gly Phe Asp Asn | Asp |
| 305             |                     | 310                 | 315 |
| Arg Ala Asp Gln | Leu Val Tyr Arg Phe | Cys Ser Val Ser Asp | Glu |
| 320             |                     | 325                 | 330 |
| Ser Asn Asp Leu | Leu Tyr Gln Tyr Cys | Asp Ala Glu Ser Gly | Ser |
| 335             |                     | 340                 | 345 |
| Thr Gly Ser Gly | Val Tyr Leu Arg Leu | Lys Asp Pro Asp Lys | Lys |
| 350             |                     | 355                 | 360 |
| Asn Trp Lys Arg | Lys Ile Ile Ala Val | Tyr Ser Gly His Gln | Trp |
| 365             |                     | 370                 | 375 |
| Val Asp Val His | Gly Val Gln Lys Asp | Tyr Asn Val Ala Val | Arg |
| 380             |                     | 385                 | 390 |
| Ile Thr Pro Leu | Lys Tyr Ala Gln Ile | Cys Leu Trp Ile His | Gly |
| 395             |                     | 400                 | 405 |
| Asn Asp Ala Asn | Cys Ala Tyr Gly     |                     |     |
| 410             |                     |                     |     |

<210> 297  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 297  
 gcatctgcag gagagagcga aggg 24

<210> 298  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 298  
catcggtccc gtgaatccag aggc 24

<210> 299  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 299  
gaagggaggc cttcctttca gtggacccgg gtcaagaata cccac 45

<210> 300  
<211> 1869  
<212> DNA  
<213> Homo sapiens

<400> 300  
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ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100  
tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150  
gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200  
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250  
gccccatggag tgaatgctca cgcacctgcg ggggaggggc ctccactct 300  
ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350  
cagaacatgc agtaatgtgg actgccacc agaagcaggt gatttccgag 400  
ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450  
gaatggcttc ctgtgtctaa tgaccctgac aacctatgtt cactcaagtg 500  
ccaagccaaa ggaacaacc tggttgttga actagcacct aaggtcttag 550  
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cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950  
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 gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800  
 taagtgaat catctacca aagctttttg gctctcaaat taaagattga 1850  
 ttagtttcaa aaaaaaaaaa 1869

<210> 301  
 <211> 525  
 <212> PRT  
 <213> Homo sapiens

<400> 301  
 Met Glu Cys Cys Arg Arg Ala Thr Pro Gly Thr Leu Leu Leu Phe  
   1                  5                  10                  15  
 Leu Ala Phe Leu Leu Leu Ser Ser Arg Thr Ala Arg Ser Glu Glu  
                   20                  25                  30  
 Asp Arg Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp Ser Glu Cys  
                   35                  40                  45  
 Ser Arg Thr Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg Arg Cys  
                   50                  55                  60



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr |  | 65  | 70  | 75  |
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala |  | 80  | 85  | 90  |
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe |  | 95  | 100 | 105 |
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser |  | 110 | 115 | 120 |
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala |  | 125 | 130 | 135 |
| Pro | Lys | Val | Leu | Asp | Gly | Thr | Arg | Cys | Tyr | Thr | Glu | Ser | Leu | Asp |  | 140 | 145 | 150 |
| Met | Cys | Ile | Ser | Gly | Leu | Cys | Gln | Ile | Val | Gly | Cys | Asp | His | Gln |  | 155 | 160 | 165 |
| Leu | Gly | Ser | Thr | Val | Lys | Glu | Asp | Asn | Cys | Gly | Val | Cys | Asn | Gly |  | 170 | 175 | 180 |
| Asp | Gly | Ser | Thr | Cys | Arg | Leu | Val | Arg | Gly | Gln | Tyr | Lys | Ser | Gln |  | 185 | 190 | 195 |
| Leu | Ser | Ala | Thr | Lys | Ser | Asp | Asp | Thr | Val | Val | Ala | Leu | Pro | Tyr |  | 200 | 205 | 210 |
| Gly | Ser | Arg | His | Ile | Arg | Leu | Val | Leu | Lys | Gly | Pro | Asp | His | Leu |  | 215 | 220 | 225 |
| Tyr | Leu | Glu | Thr | Lys | Thr | Leu | Gln | Gly | Thr | Lys | Gly | Glu | Asn | Ser |  | 230 | 235 | 240 |
| Leu | Ser | Ser | Thr | Gly | Thr | Phe | Leu | Val | Asp | Asn | Ser | Ser | Val | Asp |  | 245 | 250 | 255 |
| Phe | Gln | Lys | Phe | Pro | Asp | Lys | Glu | Ile | Leu | Arg | Met | Ala | Gly | Pro |  | 260 | 265 | 270 |
| Leu | Thr | Ala | Asp | Phe | Ile | Val | Lys | Ile | Arg | Asn | Ser | Gly | Ser | Ala |  | 275 | 280 | 285 |
| Asp | Ser | Thr | Val | Gln | Phe | Ile | Phe | Tyr | Gln | Pro | Ile | Ile | His | Arg |  | 290 | 295 | 300 |
| Trp | Arg | Glu | Thr | Asp | Phe | Phe | Pro | Cys | Ser | Ala | Thr | Cys | Gly | Gly |  | 305 | 310 | 315 |
| Gly | Tyr | Gln | Leu | Thr | Ser | Ala | Glu | Cys | Tyr | Asp | Leu | Arg | Ser | Asn |  | 320 | 325 | 330 |
| Arg | Val | Val | Ala | Asp | Gln | Tyr | Cys | His | Tyr | Tyr | Pro | Glu | Asn | Ile |  | 335 | 340 | 345 |
| Lys | Pro | Lys | Pro | Lys | Leu | Gln | Glu | Cys | Asn | Leu | Asp | Pro | Cys | Pro |  |     |     |     |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 350                                 | 355                     | 360 |
| Ala Ser Asp Gly Tyr Lys Gln Ile Met | Pro Tyr Asp Leu Tyr His |     |
| 365                                 | 370                     | 375 |
| Pro Leu Pro Arg Trp Glu Ala Thr Pro | Trp Thr Ala Cys Ser Ser |     |
| 380                                 | 385                     | 390 |
| Ser Cys Gly Gly Gly Ile Gln Ser Arg | Ala Val Ser Cys Val Glu |     |
| 395                                 | 400                     | 405 |
| Glu Asp Ile Gln Gly His Val Thr Ser | Val Glu Glu Trp Lys Cys |     |
| 410                                 | 415                     | 420 |
| Met Tyr Thr Pro Lys Met Pro Ile Ala | Gln Pro Cys Asn Ile Phe |     |
| 425                                 | 430                     | 435 |
| Asp Cys Pro Lys Trp Leu Ala Gln Glu | Trp Ser Pro Cys Thr Val |     |
| 440                                 | 445                     | 450 |
| Thr Cys Gly Gln Gly Leu Arg Tyr Arg | Val Val Leu Cys Ile Asp |     |
| 455                                 | 460                     | 465 |
| His Arg Gly Met His Thr Gly Gly Cys | Ser Pro Lys Thr Lys Pro |     |
| 470                                 | 475                     | 480 |
| His Ile Lys Glu Glu Cys Ile Val Pro | Thr Pro Cys Tyr Lys Pro |     |
| 485                                 | 490                     | 495 |
| Lys Glu Lys Leu Pro Val Glu Ala Lys | Leu Pro Trp Phe Lys Gln |     |
| 500                                 | 505                     | 510 |
| Ala Gln Glu Leu Glu Glu Gly Ala Ala | Val Ser Glu Glu Pro Ser |     |
| 515                                 | 520                     | 525 |

<210> 302  
 <211> 1533  
 <212> DNA  
 <213> Homo sapiens

<400> 302  
 cggacgcgtg ggcggcggct gcggaactcc cgtggagggg ccggtgggccc 50  
 ctcgggcctg acagatggca gtggccactg cggcggcagt actggccgct 100  
 ctggggcggg cgctgtggct ggcggcccgc cggttcgtgg ggcccagggt 150  
 ccagcggctg cgcagaggcg gggaccccgg cctcatgcac gggaagactg 200  
 tgctgatcac cggggcgaac agcggcctgg gccgcgccac ggccgcccag 250  
 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300  
 cgccgaggag gcggcgggtc agctccgcgc cgagctccgc caggccgcgcg 350  
 agtgcgggcc agagcctggc gtcagcgggg tgggcgagct catagtccgg 400  
 gagctggacc tcgcctcgct gcgctcgggtg cgcgccttct gccaggaaat 450

gctccaggaa gagcctagggc tggatgtctt gatcaataac gcagggatct 500  
tccagtcccc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550  
gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600  
caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650  
aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700  
aaaagctttt gttatagccg gagcaaaactg gctaacattc tttttaccag 750  
ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800  
atcctggtat tgtacggaca aatctgggga ggcacataca cattccactg 850  
ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaactcc 900  
agtagaaggt gccagactt ccatttattt ggcctcttca cctgaggtag 950  
aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000  
cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050  
agtgatgggtt ggcctgctaa aataggaaca aggagtaaaa gagctgttta 1100  
taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150  
acttggtact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200  
ggtacatgtg ggtattttgg agttactgaa aaattatttt tgggataaga 1250  
gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300  
aagtacaatg aaaaatacaa ttatatgtga aaattataac tgggcaagca 1350  
tggatgacat attaataattt gtcagaatta agtgactcaa agtgctatcg 1400  
agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450  
ttactacaat gtttggtgtt tgtgtggaaa ttatctgcct ggtgtgtgca 1500  
cacaagtctt acttggaata aatttactgg tac 1533

<210> 303  
<211> 336  
<212> PRT  
<213> Homo sapiens

<400> 303  
Met Ala Val Ala Thr Ala Ala Ala Val Leu Ala Ala Leu Gly Gly  
1 5 10 15  
Ala Leu Trp Leu Ala Ala Arg Arg Phe Val Gly Pro Arg Val Gln  
20 25 30  
Arg Leu Arg Arg Gly Gly Asp Pro Gly Leu Met His Gly Lys Thr  
35 40 45

09978299-101501

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ile | Thr | Gly | Ala | Asn | Ser | Gly | Leu | Gly | Arg | Ala | Thr | Ala | 50  | 55  | 60  |
| Ala | Glu | Leu | Leu | Arg | Leu | Gly | Ala | Arg | Val | Ile | Met | Gly | Cys | Arg | 65  | 70  | 75  |
| Asp | Arg | Ala | Arg | Ala | Glu | Glu | Ala | Ala | Gly | Gln | Leu | Arg | Arg | Glu | 80  | 85  | 90  |
| Leu | Arg | Gln | Ala | Ala | Glu | Cys | Gly | Pro | Glu | Pro | Gly | Val | Ser | Gly | 95  | 100 | 105 |
| Val | Gly | Glu | Leu | Ile | Val | Arg | Glu | Leu | Asp | Leu | Ala | Ser | Leu | Arg | 110 | 115 | 120 |
| Ser | Val | Arg | Ala | Phe | Cys | Gln | Glu | Met | Leu | Gln | Glu | Glu | Pro | Arg | 125 | 130 | 135 |
| Leu | Asp | Val | Leu | Ile | Asn | Asn | Ala | Gly | Ile | Phe | Gln | Cys | Pro | Tyr | 140 | 145 | 150 |
| Met | Lys | Thr | Glu | Asp | Gly | Phe | Glu | Met | Gln | Phe | Gly | Val | Asn | His | 155 | 160 | 165 |
| Leu | Gly | His | Phe | Leu | Leu | Thr | Asn | Leu | Leu | Leu | Gly | Leu | Leu | Lys | 170 | 175 | 180 |
| Ser | Ser | Ala | Pro | Ser | Arg | Ile | Val | Val | Val | Ser | Ser | Lys | Leu | Tyr | 185 | 190 | 195 |
| Lys | Tyr | Gly | Asp | Ile | Asn | Phe | Asp | Asp | Leu | Asn | Ser | Glu | Gln | Ser | 200 | 205 | 210 |
| Tyr | Asn | Lys | Ser | Phe | Cys | Tyr | Ser | Arg | Ser | Lys | Leu | Ala | Asn | Ile | 215 | 220 | 225 |
| Leu | Phe | Thr | Arg | Glu | Leu | Ala | Arg | Arg | Leu | Glu | Gly | Thr | Asn | Val | 230 | 235 | 240 |
| Thr | Val | Asn | Val | Leu | His | Pro | Gly | Ile | Val | Arg | Thr | Asn | Leu | Gly | 245 | 250 | 255 |
| Arg | His | Ile | His | Ile | Pro | Leu | Leu | Val | Lys | Pro | Leu | Phe | Asn | Leu | 260 | 265 | 270 |
| Val | Ser | Trp | Ala | Phe | Phe | Lys | Thr | Pro | Val | Glu | Gly | Ala | Gln | Thr | 275 | 280 | 285 |
| Ser | Ile | Tyr | Leu | Ala | Ser | Ser | Pro | Glu | Val | Glu | Gly | Val | Ser | Gly | 290 | 295 | 300 |
| Arg | Tyr | Phe | Gly | Asp | Cys | Lys | Glu | Glu | Glu | Leu | Leu | Pro | Lys | Ala | 305 | 310 | 315 |
| Met | Asp | Glu | Ser | Val | Ala | Arg | Lys | Leu | Trp | Asp | Ile | Ser | Glu | Val | 320 | 325 | 330 |
| Met | Val | Gly | Leu | Leu | Lys |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 304  
 <211> 521  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 20, 34, 62, 87, 221, 229  
 <223> unknown base

<400> 304  
 ggggattgta aagaggaagn actgtgcccc aagntatgga tgaatctgtt 50  
 gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100  
 ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150  
 gtgatcagga atgggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200  
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttgagatt 250  
 actgaaaaat ttttttggg ataagagaat ttcagcaaag atgttttaaa 300  
 tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350  
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400  
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450  
 tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500  
 tggaaattat ctgcctggct t 521

<210> 305  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 305  
 ccaggaaatg ctccaggaag agcc 24

<210> 306  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 306  
 gcccatgaca ccaaattgaa gagtgg 26

<210> 307

<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 307  
aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308  
<211> 1523  
<212> DNA  
<213> Homo sapiens

<400> 308  
gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 50  
cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100  
ccagcgctg tccctgtcac ggaccccagc gttaccatgc atcctgccgt 150  
cttcctatcc ttaccgacc tcagatgctc cttctgctc ctggttaactt 200  
gggtttttac tctgtgaaca actgaaataa caagtcttgc tacagagaat 250  
atagatgaaa ttttaaaca tgctgatgtt gctttagtaa atttttatgc 300  
tgactggtgt cgtttcagtc agatgttgca tccaatttt gaggaagctt 350  
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400  
agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 450  
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500  
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550  
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600  
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650  
cggacaacta tagagttttt gaacgagtag cgaatatattt gcatgatgac 700  
tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750  
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800  
tgtacttggg agctatgaca aattttgatg tgacttaca ttggattcaa 850  
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900  
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950  
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000  
agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050

acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100  
ctattgacag ctttaggcat atgtatgtgt ttggagactt caaagatgta 1150  
ttaattcctg gaaaactcaa gcaattcgta tttgacttac attctggaaa 1200  
actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250  
gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300  
aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350  
gctttaaaaaa cttgaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400  
cctacgtggg ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450  
tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500  
aaaaaaaaaa aaaaaaaaaa aaa 1523

<210> 309  
<211> 406  
<212> PRT  
<213> Homo sapiens

<400> 309

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Pro | Ala | Val | Phe | Leu | Ser | Leu | Pro | Asp | Leu | Arg | Cys | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Leu | Leu | Leu | Leu | Val | Thr | Trp | Val | Phe | Thr | Pro | Val | Thr | Thr | Glu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Ile | Thr | Ser | Leu | Ala | Thr | Glu | Asn | Ile | Asp | Glu | Ile | Leu | Asn | Asn |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ala | Asp | Val | Ala | Leu | Val | Asn | Phe | Tyr | Ala | Asp | Trp | Cys | Arg | Phe |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Ser | Gln | Met | Leu | His | Pro | Ile | Phe | Glu | Glu | Ala | Ser | Asp | Val | Ile |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Lys | Glu | Glu | Phe | Pro | Asn | Glu | Asn | Gln | Val | Val | Phe | Ala | Arg | Val |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Asp | Cys | Asp | Gln | His | Ser | Asp | Ile | Ala | Gln | Arg | Tyr | Arg | Ile | Ser |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Lys | Tyr | Pro | Thr | Leu | Lys | Leu | Phe | Arg | Asn | Gly | Met | Met | Met | Lys |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Arg | Glu | Tyr | Arg | Gly | Gln | Arg | Ser | Val | Lys | Ala | Leu | Ala | Asp | Tyr |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Ile | Arg | Gln | Gln | Lys | Ser | Asp | Pro | Ile | Gln | Glu | Ile | Arg | Asp | Leu |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Ala | Glu | Ile | Thr | Thr | Leu | Asp | Arg | Ser | Lys | Arg | Asn | Ile | Ile | Gly |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

09978299-101501

Tyr Phe Glu Gln Lys Asp Ser Asp Asn Tyr Arg Val Phe Glu Arg  
170 175 180

Val Ala Asn Ile Leu His Asp Asp Cys Ala Phe Leu Ser Ala Phe  
185 190 195

Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn Ile Ile  
200 205 210

Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu Gly  
215 220 225

Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys  
230 235 240

Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu  
245 250 255

Leu Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys  
260 265 270

Glu Asp Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg  
275 280 285

Gln Leu Ile Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp  
290 295 300

Cys Asp Lys Phe Arg His Pro Leu Leu His Ile Gln Lys Thr Pro  
305 310 315

Ala Asp Cys Pro Val Ile Ala Ile Asp Ser Phe Arg His Met Tyr  
320 325 330

Val Phe Gly Asp Phe Lys Asp Val Leu Ile Pro Gly Lys Leu Lys  
335 340 345

Gln Phe Val Phe Asp Leu His Ser Gly Lys Leu His Arg Glu Phe  
350 355 360

His His Gly Pro Asp Pro Thr Asp Thr Ala Pro Gly Glu Gln Ala  
365 370 375

Gln Asp Val Ala Ser Ser Pro Pro Glu Ser Ser Phe Gln Lys Leu  
380 385 390

Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu Arg Asp Arg Asp Glu  
395 400 405

Leu

<210> 310  
<211> 182  
<212> DNA  
<213> Homo sapiens  
  
<220>  
<221> unsure



<222> 36, 48  
<223> unknown base

<400> 310  
attaaggaag aatttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50  
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100  
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150  
ggtcagcgat cagtgaagc attggcagat ta 182

<210> 311  
<211> 598  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396  
<223> unknown base

<400> 311  
agaggcctct ctggaagttg tcccgggtgt tcgccgngg agcccgggtc 50  
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcgggtcc 100  
cggagcccag ccctttccta acccaacca acctagccn gtcccagccg 150  
ccagcgctg tccctgtcnc gganccagc gtnaccatgc atcctgccgt 200  
cttctatcc ttaccgcacc tcagatgctc cttctgctc ctggttaactt 250  
gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300  
atagatgaaa ttttaaacna tgctgatgtg gctttagtca atttttatgc 350  
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400  
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450  
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500  
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550  
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 312  
tgagaggcct ctctggaagt tg 22

<210> 313  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 313  
 gtcagcgatc agtgaaagc 19  
  
 <210> 314  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 314  
 ccagaatgaa gtagctcggc 20  
  
 <210> 315  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 315  
 ccgactcaaa atgcattgtc 20  
  
 <210> 316  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 316  
 catttggcag gaattgtcc 19  
  
 <210> 317  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 317  
 ggtgctatag gccaaagg 18  
  
 <210> 318  
 <211> 24  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttccta tccttaccgc acctcagatg ctcccttctg ctctg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

tacctgaat ccccttgtag tcccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttactactggg tctcaatatg 250

cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaa tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450

caacacacag aagaattggt ccagttaagt gcatgcaaaa agccaccaa 500

tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

0997899-10501  
TOSTOT-66294660

tgatcagtta ctttaaaaaa tgactcctta ttttttaaata gtttccacat 600  
 ttttgcttgt ggaagactg ttttcatatg ttatactcag ataaagattt 650  
 taaatggtat tacgtataaa ttaatatataa atgattacct ctgggtgtga 700  
 cagggttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750  
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800  
 cttgtagggc tcatttttgg ttcattgaaa cagtatctaa ttataaatta 850  
 gctgtagata tcagggtgctt ctgatgaagt gaaaatgtat atctgactag 900  
 tgggaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950  
 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000  
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050  
 taaatatact tgctttaatt cttaagcata agtaaacadg atataaaaaat 1100  
 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaagtgtg 1150  
 ttttatttgt aagacattac ttattaagaa attgggttatt atgcttactg 1200  
 ttctaactctg gtggtaaagg tattcttaag aatttgcagg tactacagat 1250  
 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300  
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322  
 <211> 144  
 <212> PRT  
 <213> Homo sapiens

<400> 322  
 Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu  
 1 5 10 15  
 Leu Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala  
 20 25 30  
 Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys  
 35 40 45  
 Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala  
 50 55 60  
 Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu  
 65 70 75  
 Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met  
 80 85 90  
 Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr  
 95 100 105

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Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp  
 110 115 120

Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr  
 125 130 135

Gly Met Ile Tyr Val Leu Val Ser Ser  
 140

<210> 323  
 <211> 477  
 <212> DNA  
 <213> Homo sapiens

<400> 323  
 attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50  
 tgtaataccc tgaatcccct tgtactccca gactaccta tccacgcttt 100  
 cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtotca 150  
 atatgcccct cttggcatat catatttgga ggtatatgag tagaccagtg 200  
 atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250  
 tctagcatat tgtcagaagg aaggatgggtg caaattagct ttttatcttc 300  
 tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350  
 tagaacaaca cacagaagaa ttggtccagt taagtgcag caaaaagcca 400  
 ccaaataaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450  
 gaatctgatc agttacttta aaaaatg 477

<210> 324  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 324  
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325  
 <211> 41  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 325  
 caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 326

<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 326  
gtgcagcaga gtggcttaca 20

<210> 327  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 327  
actggaccaa ttcttctgtg 20

<210> 328  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 328  
gatattctag catattgtca gaaggaagga tgggtgcaa tagct 45

<210> 329  
<211> 1174  
<212> DNA  
<213> Homo sapiens

<400> 329  
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50  
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100  
ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150  
ggagggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200  
tacggcgctc tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250  
accctaagga agaggagttg tacgcatgtc agagaggttg caggctgttt 300  
tcaatttgtc agtttgtgga tgatggaatt gacttaaadc gaactaaatt 350  
ggaatgtgaa tctgcatgta cagaagcata ttccaatct gatgagcaat 400  
atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450  
caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500

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aactctggtg aggtcattct ggagtgacat gatggactcc gcacagagct 550  
 tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600  
 gttatattcc agtctaagcc agaaatccag tacgcaccac atttgagca 650  
 ggagcctaca aatttgagag aatcatctct aagcaaaatg tcctatctgc 700  
 aatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750  
 gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800  
 aactcttgct ctctcgggta tggattgct ttggatttgt tgtgcaactg 850  
 ttgctacagc tgtggagcag tatgttcct ctgagaagct gagtatctat 900  
 ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950  
 ttctcttggtg gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000  
 ctctacctac aaaagtgaat cttgctcatt ctgaaattta agcatttttc 1050  
 ttttaaaaga caagtgaat agacatctaa aattccactc ctcatagagc 1100  
 ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150  
 caaataaagt tactcaaate tgtg 1174

<210> 330  
 <211> 323  
 <212> PRT  
 <213> Homo sapiens

<400> 330  
 Met Ala Ala Pro Lys Gly Ser Leu Trp Val Arg Thr Gln Leu Gly  
 1 5 10 15  
 Leu Pro Pro Leu Leu Leu Thr Met Ala Leu Ala Gly Gly Ser  
 20 25 30  
 Gly Thr Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr  
 35 40 45  
 Ala Ser Cys His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr  
 50 55 60  
 Tyr Pro Lys Glu Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg  
 65 70 75  
 Leu Phe Ser Ile Cys Gln Phe Val Asp Asp Gly Ile Asp Leu Asn  
 80 85 90  
 Arg Thr Lys Leu Glu Cys Glu Ser Ala Cys Thr Glu Ala Tyr Ser  
 95 100 105  
 Gln Ser Asp Glu Gln Tyr Ala Cys His Leu Gly Cys Gln Asn Gln  
 110 115 120

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Pro | Phe | Ala | Glu | Leu | Arg | Gln | Glu | Gln | Leu | Met | Ser | Leu | Met |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Pro | Lys | Met | His | Leu | Leu | Phe | Pro | Leu | Thr | Leu | Val | Arg | Ser | Phe |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Trp | Ser | Asp | Met | Met | Asp | Ser | Ala | Gln | Ser | Phe | Ile | Thr | Ser | Ser |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Trp | Thr | Phe | Tyr | Leu | Gln | Ala | Asp | Asp | Gly | Lys | Ile | Val | Ile | Phe |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Gln | Ser | Lys | Pro | Glu | Ile | Gln | Tyr | Ala | Pro | His | Leu | Glu | Gln | Glu |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Pro | Thr | Asn | Leu | Arg | Glu | Ser | Ser | Leu | Ser | Lys | Met | Ser | Tyr | Leu |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Gln | Met | Arg | Asn | Ser | Gln | Ala | His | Arg | Asn | Phe | Leu | Glu | Asp | Gly |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Glu | Ser | Asp | Gly | Phe | Leu | Arg | Cys | Leu | Ser | Leu | Asn | Ser | Gly | Trp |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ile | Leu | Thr | Thr | Thr | Leu | Val | Leu | Ser | Val | Met | Val | Leu | Leu | Trp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Ile | Cys | Cys | Ala | Thr | Val | Ala | Thr | Ala | Val | Glu | Gln | Tyr | Val | Pro |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Ser | Glu | Lys | Leu | Ser | Ile | Tyr | Gly | Asp | Leu | Glu | Phe | Met | Asn | Glu |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Gln | Lys | Leu | Asn | Arg | Tyr | Pro | Ala | Ser | Ser | Leu | Val | Val | Val | Arg |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ser | Lys | Thr | Glu | Asp | His | Glu | Glu | Ala | Gly | Pro | Leu | Pro | Thr | Lys |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Val | Asn | Leu | Ala | His | Ser | Glu | Ile |     |     |     |     |     |     |     |  |
|     |     |     |     | 320 |     |     |     |     |     |     |     |     |     |     |  |

<210> 331  
 <211> 350  
 <212> DNA  
 <213> Homo sapiens

<400> 331  
 ttgggtgata cggcgtcttg ccaccgggcc tgtcagttga cctaccctt 50  
 gcacacctac cctaaggaag aggagttgta cgcattgtcag agaggttgca 100  
 ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaattcga 150  
 actaaattgg aatgtgaatc tgcatgtaca gaagcatatt cccaattctga 200  
 tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250



aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300

tttcctctaa ctctggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332

<211> 562

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 47

<223> unknown base

<400> 332

cacactggcc ggatctttta gaggcctttg accttgacca agggtcngga 50

aaacagcaac aagctgagct gctgtgacag aggaacaag atggcggcgc 100

cgaagggagc ctttgggtga ggacccaact ggggctcccg ccgctgctgc 150

tgctgaccat ggccctggcc ggaggttcgg ggaccgcttc ggctgaagca 200

tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250

gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300

agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350

gacttaaata gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400

ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450

tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgcaaaa 500

atgcacctac tctttcctct aactctggtg aggtcattct ggagtacat 550

gatggactcc gc 562

<210> 333

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 333

acaagctgag ctgctgtgac ag 22

<210> 334

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<400> 334  
tgattctggc aaccaagatg gc 22

<210> 335  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 335  
atggccttgg ccggagggttc ggggaccgct tcggctgaag 40

<210> 336  
<211> 1885  
<212> DNA  
<213> Homo sapiens

<400> 336  
gcgagggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50  
cggcccggag gtggggcgcc gctggggccg gcccgcacgg gcttcactctg 100  
agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150  
gcgacaagct gccggagctg caatgggccc cggctgggga ttcttgtttg 200  
gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250  
cccccgaga cagcggcaca gagtgcttc tgccagggtta gtggttactt 300  
ggatgattgt acctgtgatg ttgaaacct tgatagattt aataactaca 350  
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400  
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450  
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500  
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550  
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600  
tctgagttag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650  
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700  
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750  
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800  
agccacagac aattaaaaga cctttaaatc ctttggttctc tgggtcaaggg 850  
acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900  
aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950

tgcatttgag tgcaagatat cttttacaag agacctgggt agaaaagaaa 1000  
 tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050  
 tgaaggagaa ggtccaagaa ggcttaagaa cttgtatgtt ctctacttaa 1100  
 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgcccagat 1150  
 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatgtt 1200  
 acttctggaa atacttcatg aaatcaagtc atttcctttg cattttgatg 1250  
 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300  
 gactttcgac tgcatttttag aaatatttca agaattatgg attgtgttgg 1350  
 ttgttttaaa tgcgtctgtt ggggaaagct tcagactcag gggttgggca 1400  
 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450  
 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500  
 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550  
 tcaggaaact gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600  
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650  
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700  
 aaggagaatt atattgtttt aagtaaacac attttttaaa attgtgttaa 1750  
 gtctatgtat aatactactg tgagtaaaag taatacttta ataatgtggt 1800  
 acaaatttta aagtttaata ttgaataaaa ggaggattat caaatttaaa 1850  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 1885

<210> 337  
 <211> 468  
 <212> PRT  
 <213> Homo sapiens

<400> 337  
 Met Gly Arg Gly Trp Gly Phe Leu Phe Gly Leu Leu Gly Ala Val  
 1 5 10 15  
 Trp Leu Leu Ser Ser Gly His Gly Glu Glu Gln Pro Pro Glu Thr  
 20 25 30  
 Ala Ala Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp  
 35 40 45  
 Cys Thr Cys Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg  
 50 55 60  
 Leu Phe Pro Arg Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg  
 65 70 75

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|   |   |     |     |     |
|---|---|-----|-----|-----|
| Tyr Tyr Lys Val   | Asn Leu Lys Arg Pro Cys Pro Phe Trp Asn Asp | 80  | 85  | 90  |
| Ile Ser Gln Cys Gly Arg Arg Asp Cys Ala Val Lys Pro Cys Gln |   | 95  | 100 | 105 |
| Ser Asp Glu Val   | Pro Asp Gly Ile Lys Ser Ala Ser Tyr Lys Tyr | 110 | 115 | 120 |
| Ser Glu Glu Ala   | Asn Asn Leu Ile Glu Glu Cys Glu Gln Ala Glu | 125 | 130 | 135 |
| Arg Leu Gly Ala   | Val Asp Glu Ser Leu Ser Glu Glu Thr Gln Lys | 140 | 145 | 150 |
| Ala Val Leu Gln   | Trp Thr Lys His Asp Asp Ser Ser Asp Asn Phe | 155 | 160 | 165 |
| Cys Glu Ala Asp   | Asp Ile Gln Ser Pro Glu Ala Glu Tyr Val Asp | 170 | 175 | 180 |
| Leu Leu Leu Asn   | Pro Glu Arg Tyr Thr Gly Tyr Lys Gly Pro Asp | 185 | 190 | 195 |
| Ala Trp Lys Ile   | Trp Asn Val Ile Tyr Glu Glu Asn Cys Phe Lys | 200 | 205 | 210 |
| Pro Gln Thr Ile   | Lys Arg Pro Leu Asn Pro Leu Ala Ser Gly Gln | 215 | 220 | 225 |
| Gly Thr Ser Glu   | Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu | 230 | 235 | 240 |
| Cys Val Glu Lys   | Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His | 245 | 250 | 255 |
| Ala Ser Ile Asn   | Val His Leu Ser Ala Arg Tyr Leu Leu Gln Glu | 260 | 265 | 270 |
| Thr Trp Leu Glu   | Lys Lys Trp Gly His Asn Ile Thr Glu Phe Gln | 275 | 280 | 285 |
| Gln Arg Phe Asp   | Gly Ile Leu Thr Glu Gly Glu Gly Pro Arg Arg | 290 | 295 | 300 |
| Leu Lys Asn Leu   | Tyr Phe Leu Tyr Leu Ile Glu Leu Arg Ala Leu | 305 | 310 | 315 |
| Ser Lys Val Leu   | Pro Phe Phe Glu Arg Pro Asp Phe Gln Leu Phe | 320 | 325 | 330 |
| Thr Gly Asn Lys   | Ile Gln Asp Glu Glu Asn Lys Met Leu Leu Leu | 335 | 340 | 345 |
| Glu Ile Leu His   | Glu Ile Lys Ser Phe Pro Leu His Phe Asp Glu | 350 | 355 | 360 |
| Asn Ser Phe Phe Ala Gly Asp Lys Lys Glu Ala His Lys Leu Lys |   |     |     |     |

|                 |   |  |     |  |     |
|-----------------|---|--|-----|--|-----|
|                 | 365   |  | 370 |  | 375 |
| Glu Asp Phe Arg | Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp |  |     |  |     |
|                 | 380   |  | 385 |  | 390 |
| Cys Val Gly Cys | Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr |  |     |  |     |
|                 | 395   |  | 400 |  | 405 |
| Gln Gly Leu Gly | Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu |  |     |  |     |
|                 | 410   |  | 415 |  | 420 |
| Ile Ala Asn Met | Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu |  |     |  |     |
|                 | 425   |  | 430 |  | 435 |
| Thr Arg Gln Glu | Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile |  |     |  |     |
|                 | 440   |  | 445 |  | 450 |
| Ser Thr Ser Val | Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln |  |     |  |     |
|                 | 455   |  | 460 |  | 465 |

Asn Ile His

<210> 338  
 <211> 507  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 101, 263, 376, 397, 426  
 <223> unknown base

<400> 338  
 gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50  
 ttaaaagacc tttaaatacct ttggcttctg gtcaaggagac aagtgaagag 100  
 nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150  
 ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200  
 caagatatct tttaacaagag acctgggttag aaaagaaatg gggacacaac 250  
 attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300  
 tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350  
 ctttatccaa agtgttacca ttcttngagc gccagattt tcaactnttt 400  
 actggaaata aaattcagga tgaggnaaac aaaatgttac ttttgaaat 450  
 acttcatgaa atcaagtcatt ttcctttgca ttttgatgag aattcatttt 500  
 tttgctg 507

<210> 339  
 <211> 20

<212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 339  
     aagctgccgg agctgcaatg 20  
  
 <210> 340  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 340  
     ttgcttctta atcctgagcg c 21  
  
 <210> 341  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 341  
     aaaggaggac tttcgactgc 20  
  
 <210> 342  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 342  
     agagattcat ccactgctcc aagtcg 26  
  
 <210> 343  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 343  
     tgtccagaaa caggcacata tcagc 25  
  
 <210> 344  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 344

agacagcggc acagaggtgc ttctgccagg ttagtggtta cttggatgat 50

<210> 345

<211> 1486

<212> DNA

<213> Homo sapiens

<400> 345

cggacgcgtg ggcggacgcg tgggcggacg cgtgggttgg gagggggcag 50  
gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100  
ggacttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150  
cactcacctg ttcttgcccc tgggtgttct gacaggtctc tgctccccct 200  
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250  
gaatttgat acagtgtctt acaacatgtt gggggtggac agcgatggat 300  
gctgggtggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350  
tttatcgctg ccctgtaggg ggggccaca atgccccatg tgccaagggc 400  
cacttaggtg actaccaact gggaaattca tctcatctg ctgtgaatat 450  
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aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900  
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cctggccagg tgtgttgccc cacacctgta attctagcac tttgggaggc 1050  
caaggtgggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100  
catggtgaaa ctccatctct actaaaaaaaa aaaaaataca aaaattagct 1150

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 gtgcctctgc actctagcgt gggtgacaga gtaagcgaga ctccatctca 1300  
 aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350  
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<210> 346  
 <211> 124  
 <212> PRT  
 <213> Homo sapiens

<400> 346  
 Met Glu Leu Pro Phe Val Thr His Leu Phe Leu Pro Leu Val Phe  
 1 5 10 15  
 Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp Glu His His Pro  
 20 25 30  
 Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val  
 35 40 45  
 Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala  
 50 55 60  
 Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg  
 65 70 75  
 Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His  
 80 85 90  
 Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn  
 95 100 105  
 Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly  
 110 115 120  
 Phe Met Val Ser

<210> 347  
 <211> 509  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 22  
 <223> unknown base

<400> 347



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 ttgccattgg gagggggcag gatgggaggg aaagtgaaga aaacagaaaa 100  
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 ggcatggaac tccccttcgt cactcacctg ttcttgcccc tgggtgttct 200  
 gacaggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250  
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 gggggtggac agcgatggat gctggtgggc gcccctggg atgggccttc 350  
 aggcgaccgg aggggggacg tttatcgctg ccctgtaggg gggggccaca 400  
 atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450  
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 tggatgatgg 509

<210> 348  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 348  
 agggacagag gccagaggac ttc 23

<210> 349  
 <211> 24  
 <212> DNA  
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<220>  
 <223> Synthetic oligonucleotide probe

<400> 349  
 caggtgcata ttcacagcag gatg 24

<210> 350  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 350  
 ggaactcccc ttcgtcactc acctgttctt gcccctgggtg ttcct 45

<210> 351  
 <211> 2056  
 <212> DNA

<213> Homo sapiens

<400> 351

aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50  
catctggggt tgggcagaaa ggagggtgct tcggagcccg ccctttctga 100  
gcttctctggg cgggtcttag aacaattcag gcttctctgc gactcagacc 150  
tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200  
gctttatattt ggaaagaaac aatgttctag gtcaaactga gtctacaaaa 250  
tgcagacttt cacaatgggt ctagaagaaa tctggacaag tcttttcatg 300  
tggtttttct acgcattgat tccatgtttg ctacacagatg aagtggccat 350  
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tcttgatgtg gagcccagtg atcgcgctg gagaaacagt gtactattct 450  
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ctcaaccatc cttacccgac ctgggatgga gatcaccaaa gatggcttcc 700  
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caggtgaagc cgagaacctg gtctgcatga catggaaacc atgaggggac 1250  
aagttgtgtt tctgttttcc gccacggaca agggatgaga gaagtaggaa 1300  
gagcctgttg tctacaagtc tagaagcaac catcagaggc aggggtggtt 1350  
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 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550  
 tacaccagc acttgcaagg ctagaggga actggtgaca ctctacagtc 1600  
 tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650  
 gatcaaggac tctacacact ggggtggcttg gagagcccac tttcccagaa 1700  
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 gtaacatgtg catgtttgtt gtgctccttt tttctgttgg taaagtacag 2000  
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 aaaaaa 2056

<210> 352  
 <211> 311  
 <212> PRT  
 <213> Homo sapiens

<400> 352  
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 Phe Met Trp Phe Phe Tyr Ala Leu Ile Pro Cys Leu Leu Thr Asp  
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 Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser  
 35 40 45  
 Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro  
 50 55 60  
 Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu  
 65 70 75  
 Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser  
 80 85 90  
 Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala  
 95 100 105  
 Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln  
 110 115 120

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser |     |     |     |     |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     |     |  |

<210> 353  
 <211> 864  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 654, 711, 748, 827  
 <223> unknown base

<400> 353  
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 cctttctagc ttcttgccg gctctagaac aattcaggct tcgctgcgac 100  
 tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150  
 agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200

ccaaatgcag actttcacaa tggttctaga agaaatctgg acaagtcttt 250  
 tcatgtgggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300  
 gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350  
 gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400  
 attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450  
 tggatcccca gcagctggtg ctcaactcact gaaggtcctg agtgtgatgt 500  
 cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550  
 cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600  
 agaaactcaa ccatccttac ccgacctggg atggagatca ccaaagatgg 650  
 cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700  
 ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750  
 gaacccttg cgcccgctgg ggtatctctc gagaaaagag aggccaata 800  
 tgaccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850  
 ggcgctgggt tgat 864

<210> 354  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 354  
 aggcttcgct gcgactagac ctc 23

<210> 355  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 355  
 ccaggtcggg taaggatggt tgag 24

<210> 356  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 356  
tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357  
<211> 1670  
<212> DNA  
<213> Homo sapiens

<400> 357  
cccacgcgtc cgcccacgcg tccgaggagc aagagagaag agagactgaa 50  
acaggagagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100  
ggccgacact gagggagggc gggaggaggt gaagaaggag agaggggaga 150  
agaggcagga gctggaaagg agagagggag gaggaggagg agatgcggga 200  
tgagacactg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250  
agaggaggtg tgggttagga accaagaggt agccctgtgg gcagcagaag 300  
gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350  
ggaaaagagc agaggaaaga ggaaagacac agagagacgg gagagagaag 400  
aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450  
gggaactggg actccctgtg gggaggagag gaaagctgga agtcctggag 500  
ggacagggtc ccagaaggag gggacagagg agctgagaga ggggggcagg 550  
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tgtggagctg aagagggttc tttatgacct ctttctgccc ccattaaggc 850  
tcagcactgg aggagagaag ctccggggaa ccttgtacaa caccggccga 900  
catgtctcct tcctgcctgc accccgacct gtggtcaatg tgtctggagg 950  
tcccctcctt tacagccacc gactcagtga actgaggctg ctgtttggag 1000  
ctcgcgacgg agccggctcg gaacatcaga tcaaccacca gggctttctt 1050  
gctgaggtgc agctcattca cttcaaccag gaactctacg ggaatttcag 1100  
cgctgcctcc cgcgcccca atggcctggc cattctcagc ctctttgtca 1150  
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accatcactc gcattctcta caagaatgat gcctactttc ttcaagacct 1250

gagcctggag ctctgttcc ctgaatcctt cggcttcac acctatcagg 1300  
 gctctctcag caccgcgcc tgctccgaga ctgtcacctg gatcctcatt 1350  
 gaccggggccc tcaatatac ctcccttcag atgcactccc tgagactcct 1400  
 gagccagaat cctccatctc agatcttcca gagcctcagc ggtaacagcc 1450  
 ggcccctgca gcccttgccc cacagggcac tgaggggcaa cagggacccc 1500  
 cggcaccgag agaggcgctg ccgaggcccc aactaccgcc tgcattgtgga 1550  
 tgggtgtcccc catggtcgct gagactcccc ttcgaggatt gcaccgcgcc 1600  
 gtcctaagcc tccccacaag gcgaggggag ttaccacctaa aacaaagcta 1650  
 ttaaaggac agaatactta 1670

<210> 358  
 <211> 328  
 <212> PRT  
 <213> Homo sapiens

<400> 358

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Ala | Arg | Leu | Ser | Ala | Pro | Arg | Ala | Leu | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Trp | Ala | Ala | Leu | Gly | Ala | Ala | Ala | His | Ile | Gly | Pro | Ala | Pro | Asp |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |
| Pro | Glu | Asp | Trp | Trp | Ser | Tyr | Lys | Asp | Asn | Leu | Gln | Gly | Asn | Phe |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |
| Val | Pro | Gly | Pro | Pro | Phe | Trp | Gly | Leu | Val | Asn | Ala | Ala | Trp | Ser |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |
| Leu | Cys | Ala | Val | Gly | Lys | Arg | Gln | Ser | Pro | Val | Asp | Val | Glu | Leu |
|     |     |     | 65  |     |     |     |     |     | 70  |     |     |     |     | 75  |
| Lys | Arg | Val | Leu | Tyr | Asp | Pro | Phe | Leu | Pro | Pro | Leu | Arg | Leu | Ser |
|     |     |     | 80  |     |     |     |     |     | 85  |     |     |     |     | 90  |
| Thr | Gly | Gly | Glu | Lys | Leu | Arg | Gly | Thr | Leu | Tyr | Asn | Thr | Gly | Arg |
|     |     |     | 95  |     |     |     |     |     | 100 |     |     |     |     | 105 |
| His | Val | Ser | Phe | Leu | Pro | Ala | Pro | Arg | Pro | Val | Val | Asn | Val | Ser |
|     |     |     | 110 |     |     |     |     |     | 115 |     |     |     |     | 120 |
| Gly | Gly | Pro | Leu | Leu | Tyr | Ser | His | Arg | Leu | Ser | Glu | Leu | Arg | Leu |
|     |     |     | 125 |     |     |     |     |     | 130 |     |     |     |     | 135 |
| Leu | Phe | Gly | Ala | Arg | Asp | Gly | Ala | Gly | Ser | Glu | His | Gln | Ile | Asn |
|     |     |     | 140 |     |     |     |     |     | 145 |     |     |     |     | 150 |
| His | Gln | Gly | Phe | Ser | Ala | Glu | Val | Gln | Leu | Ile | His | Phe | Asn | Gln |
|     |     |     | 155 |     |     |     |     |     | 160 |     |     |     |     | 165 |
| Glu | Leu | Tyr | Gly | Asn | Phe | Ser | Ala | Ala | Ser | Arg | Gly | Pro | Asn | Gly |

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| 170   | 175 | 180 |
|---|-----|-----|
| Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn |     |     |
| 185   | 190 | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile |     |     |
| 200   | 205 | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu |     |     |
| 215   | 220 | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser |     |     |
| 230   | 235 | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile |     |     |
| 245   | 250 | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg |     |     |
| 260   | 265 | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser |     |     |
| 275   | 280 | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg |     |     |
| 290   | 295 | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro |     |     |
| 305   | 310 | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg         |     |     |
| 320   | 325 |     |

<210> 359  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 359  
 tctgctgagg tgcagctcat tcac 24

<210> 360  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 360  
 gaggctctgg aagatctgag atgg 24

<210> 361  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence



<220>

<223> Synthetic oligonucleotide probe

<400> 361

gcctccttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50

<210> 362

<211> 3038

<212> DNA

<213> Homo sapiens

<400> 362

ggcgcctggt tctgcgcgta ctggctgtac ggagcaggag caagaggctc 50

ccgccagcct ccgccgccga gcctcgcttcg tgtccccgcc cctcgctcct 100

gcagctactg ctccagaaacg ctggggcgcc caccctggca gactaacgaa 150

gcagctccct tcccacccca actgcaggtc taattttgga cgctttgcct 200

gccatttctt ccaggttgag ggagccgcag aggcggaggc tcgcgtattc 250

ctgcagtcag caccacgctc gcccccgac gctcgggtgt caggcccttc 300

gcgagcgggg ctctccgtct gcggtccctt gtgaaggctc tgggcggctg 350

cagaggccgg ccgtccggtt tggctcacct ctcccaggaa acttcacact 400

ggagagccaa aaggagtgga agagcctgtc ttggagattt tcctggggaa 450

atcctgaggt cattcattat gaagtgtacc gcgcgggagt ggctcagagt 500

aaccacagtg ctgttcattg ctgagcaat tccagccatg gtggttccca 550

atgccacttt attggagaaa cttttggaaa aatacatgga tgaggatggt 600

gagtgggtgga tagccaaaca acgagggaaa agggccatca cagacaatga 650

catgcagagt attttggacc ttcataataa attacgaagt caggtgtatc 700

caacagcctc taatatggag tatatgacat gggatgtaga gctggaaaga 750

tctgcagaat cctgggctga aagttgcttg tgggaacatg gacctgcaag 800

cttgcttcca tcaattggac agaatttggg agcacactgg ggaagatata 850

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 <212> PRT  
 <213> Homo sapiens

<400> 363

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| Met | Lys | Cys | Thr | Ala | Arg | Glu | Trp | Leu | Arg | Val | Thr | Thr | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Phe | Met | Ala | Arg | Ala | Ile | Pro | Ala | Met | Val | Val | Pro | Asn | Ala | Thr |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly |

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| 170             | 175                 | 180                     |
|-----------------|---------------------|-------------------------|
| Cys Ala Ile Asn | Leu Cys His Asn Met | Asn Ile Trp Gly Gln Ile |
| 185             |                     | 190 195                 |
| Trp Pro Lys Ala | Val Tyr Leu Val Cys | Asn Tyr Ser Pro Lys Gly |
| 200             |                     | 205 210                 |
| Asn Trp Trp Gly | His Ala Pro Tyr Lys | His Gly Arg Pro Cys Ser |
| 215             |                     | 220 225                 |
| Ala Cys Pro Pro | Ser Phe Gly Gly Gly | Cys Arg Glu Asn Leu Cys |
| 230             |                     | 235 240                 |
| Tyr Lys Glu Gly | Ser Asp Arg Tyr Tyr | Pro Pro Arg Glu Glu Glu |
| 245             |                     | 250 255                 |
| Thr Asn Glu Ile | Glu Arg Gln Gln Ser | Gln Val His Asp Thr His |
| 260             |                     | 265 270                 |
| Val Arg Thr Arg | Ser Asp Asp Ser Ser | Arg Asn Glu Val Ile Ser |
| 275             |                     | 280 285                 |
| Ala Gln Gln Met | Ser Gln Ile Val Ser | Cys Glu Val Arg Leu Arg |
| 290             |                     | 295 300                 |
| Asp Gln Cys Lys | Gly Thr Thr Cys Asn | Arg Tyr Glu Cys Pro Ala |
| 305             |                     | 310 315                 |
| Gly Cys Leu Asp | Ser Lys Ala Lys Val | Ile Gly Ser Val His Tyr |
| 320             |                     | 325 330                 |
| Glu Met Gln Ser | Ser Ile Cys Arg Ala | Ala Ile His Tyr Gly Ile |
| 335             |                     | 340 345                 |
| Ile Asp Asn Asp | Gly Gly Trp Val Asp | Ile Thr Arg Gln Gly Arg |
| 350             |                     | 355 360                 |
| Lys His Tyr Phe | Ile Lys Ser Asn Arg | Asn Gly Ile Gln Thr Ile |
| 365             |                     | 370 375                 |
| Gly Lys Tyr Gln | Ser Ala Asn Ser Phe | Thr Val Ser Lys Val Thr |
| 380             |                     | 385 390                 |
| Val Gln Ala Val | Thr Cys Glu Thr Thr | Val Glu Gln Leu Cys Pro |
| 395             |                     | 400 405                 |
| Phe His Lys Pro | Ala Ser His Cys Pro | Arg Val Tyr Cys Pro Arg |
| 410             |                     | 415 420                 |
| Asn Cys Met Gln | Ala Asn Pro His Tyr | Ala Arg Val Ile Gly Thr |
| 425             |                     | 430 435                 |
| Arg Val Tyr Ser | Asp Leu Ser Ser Ile | Cys Arg Ala Ala Val His |
| 440             |                     | 445 450                 |
| Ala Gly Val Val | Arg Asn His Gly Gly | Tyr Val Asp Val Met Pro |
| 455             |                     | 460 465                 |

Val Asp Lys Arg Lys Thr Tyr Ile Ala Ser Phe Gln Asn Gly Ile  
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 485 490 495

Val Phe Ala Val Val  
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<210> 369

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<212> DNA

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<400> 369

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gcatgagggt cctggcgccc gcgctgctcc tgctgctgct ggcgctgtac 250

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gcaaaggact ttgcagatta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 600

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attgttatga agcacttttt accaacggtc agtttttaca ttttatagct 700

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 35 40 45  
 Ile Arg Tyr Ser Asp Val Lys Lys Leu Glu Met Lys Pro Lys Tyr  
 50 55 60  
 Pro His Cys Glu Glu Lys Met Val Ile Ile Thr Thr Lys Ser Val  
 65 70 75  
 Ser Arg Tyr Arg Gly Gln Glu His Cys Leu His Pro Lys Leu Gln  
 80 85 90  
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<223> Synthetic oligonucleotide probe

<400> 371

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<210> 372

<211> 24

<212> DNA

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<210> 373

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 374

<211> 3113

<212> DNA

<213> Homo sapiens

<400> 374

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accctcattg acagccaagc acagtatcca gttgtcaaca caaattatgg 150

caaaatccgg ggcctaagaa caccgttacc caatgagatc ttgggtccag 200

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<212> PRT  
<213> Homo sapiens

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Thr Asn Tyr Gly Lys Ile Arg Gly Leu Arg Thr Pro Leu Pro Asn  
35 40 45  
Glu Ile Leu Gly Pro Val Glu Gln Tyr Leu Gly Val Pro Tyr Ala

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|   |     |     |
|---|-----|-----|
| 50  | 55  | 60  |
| Ser Pro Pro Thr Gly Glu Arg Arg Phe Gln Pro Pro Glu Pro Pro |     |     |
| 65  | 70  | 75  |
| Ser Ser Trp Thr Gly Ile Arg Asn Thr Thr Gln Phe Ala Ala Val |     |     |
| 80  | 85  | 90  |
| Cys Pro Gln His Leu Asp Glu Arg Ser Leu Leu His Asp Met Leu |     |     |
| 95  | 100 | 105 |
| Pro Ile Trp Phe Thr Ala Asn Leu Asp Thr Leu Met Thr Tyr Val |     |     |
| 110   | 115 | 120 |
| Gln Asp Gln Asn Glu Asp Cys Leu Tyr Leu Asn Ile Tyr Val Pro |     |     |
| 125   | 130 | 135 |
| Thr Glu Asp Gly Ala Asn Thr Lys Lys Asn Ala Asp Asp Ile Thr |     |     |
| 140   | 145 | 150 |
| Ser Asn Asp Arg Gly Glu Asp Glu Asp Ile His Asp Gln Asn Ser |     |     |
| 155   | 160 | 165 |
| Lys Lys Pro Val Met Val Tyr Ile His Gly Gly Ser Tyr Met Glu |     |     |
| 170   | 175 | 180 |
| Gly Thr Gly Asn Met Ile Asp Gly Ser Ile Leu Ala Ser Tyr Gly |     |     |
| 185   | 190 | 195 |
| Asn Val Ile Val Ile Thr Ile Asn Tyr Arg Leu Gly Ile Leu Gly |     |     |
| 200   | 205 | 210 |
| Phe Leu Ser Thr Gly Asp Gln Ala Ala Lys Gly Asn Tyr Gly Leu |     |     |
| 215   | 220 | 225 |
| Leu Asp Gln Ile Gln Ala Leu Arg Trp Ile Glu Glu Asn Val Gly |     |     |
| 230   | 235 | 240 |
| Ala Phe Gly Gly Asp Pro Lys Arg Val Thr Ile Phe Gly Ser Gly |     |     |
| 245   | 250 | 255 |
| Ala Gly Ala Ser Cys Val Ser Leu Leu Thr Leu Ser His Tyr Ser |     |     |
| 260   | 265 | 270 |
| Glu Gly Leu Phe Gln Lys Ala Ile Ile Gln Ser Gly Thr Ala Leu |     |     |
| 275   | 280 | 285 |
| Ser Ser Trp Ala Val Asn Tyr Gln Pro Ala Lys Tyr Thr Arg Ile |     |     |
| 290   | 295 | 300 |
| Leu Ala Asp Lys Val Gly Cys Asn Met Leu Asp Thr Thr Asp Met |     |     |
| 305   | 310 | 315 |
| Val Glu Cys Leu Arg Asn Lys Asn Tyr Lys Glu Leu Ile Gln Gln |     |     |
| 320   | 325 | 330 |
| Thr Ile Thr Pro Ala Thr Tyr His Ile Ala Phe Gly Pro Val Ile |     |     |
| 335   | 340 | 345 |

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|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Asp Gly Asp Val | Ile Pro Asp Asp Pro | Gln Ile Leu Met Glu Gln |
| 350             | 355                 | 360                     |
| Gly Glu Phe Leu | Asn Tyr Asp Ile Met | Leu Gly Val Asn Gln Gly |
| 365             | 370                 | 375                     |
| Glu Gly Leu Lys | Phe Val Asp Gly Ile | Val Asp Asn Glu Asp Gly |
| 380             | 385                 | 390                     |
| Val Thr Pro Asn | Asp Phe Asp Phe Ser | Val Ser Asn Phe Val Asp |
| 395             | 400                 | 405                     |
| Asn Leu Tyr Gly | Tyr Pro Glu Gly Lys | Asp Thr Leu Arg Glu Thr |
| 410             | 415                 | 420                     |
| Ile Lys Phe Met | Tyr Thr Asp Trp Ala | Asp Lys Glu Asn Pro Glu |
| 425             | 430                 | 435                     |
| Thr Arg Arg Lys | Thr Leu Val Ala Leu | Phe Thr Asp His Gln Trp |
| 440             | 445                 | 450                     |
| Val Ala Pro Ala | Val Ala Ala Asp Leu | His Ala Gln Tyr Gly Ser |
| 455             | 460                 | 465                     |
| Pro Thr Tyr Phe | Tyr Ala Phe Tyr His | His Cys Gln Ser Glu Met |
| 470             | 475                 | 480                     |
| Lys Pro Ser Trp | Ala Asp Ser Ala His | Gly Asp Glu Val Pro Tyr |
| 485             | 490                 | 495                     |
| Val Phe Gly Ile | Pro Met Ile Gly Pro | Thr Glu Leu Phe Ser Cys |
| 500             | 505                 | 510                     |
| Asn Phe Ser Lys | Asn Asp Val Met Leu | Ser Ala Val Val Met Thr |
| 515             | 520                 | 525                     |
| Tyr Trp Thr Asn | Phe Ala Lys Thr Gly | Asp Pro Asn Gln Pro Val |
| 530             | 535                 | 540                     |
| Pro Gln Asp Thr | Lys Phe Ile His Thr | Lys Pro Asn Arg Phe Glu |
| 545             | 550                 | 555                     |
| Glu Val Ala Trp | Ser Lys Tyr Asn Pro | Lys Asp Gln Leu Tyr Leu |
| 560             | 565                 | 570                     |
| His Ile Gly Leu | Lys Pro Arg Val Arg | Asp His Tyr Arg Ala Thr |
| 575             | 580                 | 585                     |
| Lys Val Ala Phe | Trp Leu Glu Leu Val | Pro His Leu His Asn Leu |
| 590             | 595                 | 600                     |
| Asn Glu Ile Phe | Gln Tyr Val Ser Thr | Thr Thr Lys Val Pro Pro |
| 605             | 610                 | 615                     |
| Pro Asp Met Thr | Ser Phe Pro Tyr Gly | Thr Arg Arg Ser Pro Ala |
| 620             | 625                 | 630                     |
| Lys Ile Trp Pro | Thr Thr Lys Arg Pro | Ala Ile Thr Pro Ala Asn |

| 635 |     |     |     |     | 640 |     |     |     |     | 645 |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Lys | His | Ser | Lys | Asp | Pro | His | Lys | Thr | Gly | Pro | Glu | Asp |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Thr | Thr | Val | Leu | Ile | Glu | Thr | Lys | Arg | Asp | Tyr | Ser | Thr | Glu | Leu |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |
| Ser | Val | Thr | Ile | Ala | Val | Gly | Ala | Ser | Leu | Leu | Phe | Leu | Asn | Ile |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Leu | Ala | Phe | Ala | Ala | Leu | Tyr | Tyr | Lys | Lys | Asp | Lys | Arg | Arg | His |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Glu | Thr | His | Arg | Arg | Pro | Ser | Pro | Gln | Arg | Asn | Thr | Thr | Asn | Asp |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Ile | Ala | His | Ile | Gln | Asn | Glu | Glu | Ile | Met | Ser | Leu | Gln | Met | Lys |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |
| Gln | Leu | Glu | His | Asp | His | Glu | Cys | Glu | Ser | Leu | Gln | Ala | His | Asp |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |
| Thr | Leu | Arg | Leu | Thr | Cys | Pro | Pro | Asp | Tyr | Thr | Leu | Thr | Leu | Arg |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |
| Arg | Ser | Pro | Asp | Asp | Ile | Pro | Leu | Met | Thr | Pro | Asn | Thr | Ile | Thr |
|     |     |     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |
| Met | Ile | Pro | Asn | Thr | Leu | Thr | Gly | Met | Gln | Pro | Leu | His | Thr | Phe |
|     |     |     |     | 785 |     |     |     |     | 790 |     |     |     |     | 795 |
| Asn | Thr | Phe | Ser | Gly | Gly | Gln | Asn | Ser | Thr | Asn | Leu | Pro | His | Gly |
|     |     |     |     | 800 |     |     |     |     | 805 |     |     |     |     | 810 |
| His | Ser | Thr | Thr | Arg | Val |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 815 |     |     |     |     |     |     |     |     |     |     |

<210> 376  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 376  
 ggcaagctac ggaaacgtca tcgtg 25

<210> 377  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 377

aacccccgag ccaaaagatg gtcac 25

<210> 378

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 378

gtaccggtga ccaggcagca aaaggcaact atgggctcct ggatcag 47

<210> 379

<211> 2461

<212> DNA

<213> Homo sapiens

<400> 379

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ggcgatgttt gtcggctcgg gatgggtcca ggatgttact ccttcttctt 100  
ttgttggggg ctgggcaggg gccacagcaa gtcggggcgg gtcaaacgtt 150  
cgagtacttg aaacgggagc actcgctgtc gaagccctac cagggtgtgg 200  
gcacaggcag ttcctcactg tggaatctga tgggcaatgc catggtgatg 250  
accagttata tccgccttac ccagatatg caaagtaaac aggggtgcctt 300  
gtggaaccgg gtgccatgtt tcctgagaga ctgggagttg cagggtgcact 350  
tcaaaatcca tggacaagga aagaagaatc tgcattggga tggcttggca 400  
atctggtaca caaaggatcg gatgcagcca gggcctgtgt ttggaaacat 450  
ggacaaattt gtggggctgg gagtatttgt agacacctac cccaatgagg 500  
agaagcagca agagcgggta ttccctaca tctcagccat ggtgaacaac 550  
ggctccctca gctatgatca tgagcgggat gggcggccta cagagctggg 600  
aggctgcaca gccattgtcc gcaatcttca ttacgacacc ttctggtga 650  
ttcgctacgt caagaggcat ttgacgataa tgatggatat tgatggcaag 700  
catgagtggg gggactgcat tgaagtgccg ggagtcggcc tgccccgcgg 750  
ctactacttc ggcacctcct ccatcactgg ggatctctca gataatcatg 800  
atgtcatttc cttgaagttg tttgaactga cagtggagag aaccccagaa 850  
gaggaaaagc tccatcgaga tgtgttcttg ccctcagtgg acaatatgaa 900  
gctgcctgag atgacagctc cactgccgcc cctgagtggc ctggccctct 950  
tcctcatcgt cttttctcc ctggtgtttt ctgtatttgc catagtcatt 1000

ggtatcatatc tctacaacaa atggcaggaa cagagccgaa agcgcttcta 1050  
 ctgagccctc ctgctgccac cacttttgtg actgtcacc atgaggtatg 1100  
 gaaggagcag gcaactggcct gagcatgcag cctggagagt gttcttgtct 1150  
 ctagcagctg gttggggact atattctgtc actggagttt tgaatgcagg 1200  
 gaccccgcat tcccatgggt gtgcatgggg acatctaact ctggtctggg 1250  
 aagccacca cccaggga atgctgctgt gatgtgcctt tccctgcagt 1300  
 ccttccatgt gggagcagag gtgtgaagag aatttacgtg gttgtgatgc 1350  
 caaaatcaca gaacagaatt tcatagccca ggctgccgtg ttgtttgact 1400  
 cagaaggccc ttctacttca gttttgaatc cacaagaat taaaaactgg 1450  
 taacaccaca ggctttctga ccatccattc gttgggtttt gcatttgacc 1500  
 caaccctctg cctacctgag gagctttctt tggaaaccag gatggaaact 1550  
 tcttccctgc cttaccttc tttcactcca ttcatgtcc tctctgtgtg 1600  
 caacctgagc tgggaaaggc atttggatgc ctctctgttg gggcctgggg 1650  
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 gatggcttct tgctttggat cactgttccc tagcatgggt cttgggtcta 1750  
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 gtttggttaa aggttgggtg aaaaatcaag agaagcctgg aagacatcat 1850  
 ggatgccatg gattagctgt gcaactgacc agctccaggt ttgatcaaac 1900  
 caaaagcaac atttgtcatg tggctctgacc atgtggagat gtttctggac 1950  
 ttgctagagc ctgcttagct gcatgttttg tagttacgat ttttggaatc 2000  
 ccactttgag tgctgaaagt gtaaggaagc tttcttctta caccttgggc 2050  
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 gagacagttg ctgttctcat gttccaagtc tgagagcaac agaccctcat 2150  
 catctgtgcc tggaagagtt cactgtcatt gagcagcaca gcctgagtgc 2200  
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 gctgtcacc ttactgcct gggattaaat cagttacagg ccagagtctc 2300  
 cttggagggc ctggaactct gagtcctcct atgaacctct gtagcctaaa 2350  
 tgaaattctt aaaatcacgg atggaaccaa aaaaaaaaaa aaaaagggcg 2400  
 gccgcgactc tagagtcgac ctgcagtagg gataacaggg taataagctt 2450

ggccgcatg g 2461

<210> 380

<211> 348

<212> PRT

<213> Homo sapiens

<400> 380

Met Ala Ala Thr Leu Gly Pro Leu Gly Ser Trp Gln Gln Trp Arg  
1 5 10 15  
Arg Cys Leu Ser Ala Arg Asp Gly Ser Arg Met Leu Leu Leu Leu  
20 25 30  
Leu Leu Leu Gly Ser Gly Gln Gly Pro Gln Gln Val Gly Ala Gly  
35 40 45  
Gln Thr Phe Glu Tyr Leu Lys Arg Glu His Ser Leu Ser Lys Pro  
50 55 60  
Tyr Gln Gly Val Gly Thr Gly Ser Ser Ser Leu Trp Asn Leu Met  
65 70 75  
Gly Asn Ala Met Val Met Thr Gln Tyr Ile Arg Leu Thr Pro Asp  
80 85 90  
Met Gln Ser Lys Gln Gly Ala Leu Trp Asn Arg Val Pro Cys Phe  
95 100 105  
Leu Arg Asp Trp Glu Leu Gln Val His Phe Lys Ile His Gly Gln  
110 115 120  
Gly Lys Lys Asn Leu His Gly Asp Gly Leu Ala Ile Trp Tyr Thr  
125 130 135  
Lys Asp Arg Met Gln Pro Gly Pro Val Phe Gly Asn Met Asp Lys  
140 145 150  
Phe Val Gly Leu Gly Val Phe Val Asp Thr Tyr Pro Asn Glu Glu  
155 160 165  
Lys Gln Gln Glu Arg Val Phe Pro Tyr Ile Ser Ala Met Val Asn  
170 175 180  
Asn Gly Ser Leu Ser Tyr Asp His Glu Arg Asp Gly Arg Pro Thr  
185 190 195  
Glu Leu Gly Gly Cys Thr Ala Ile Val Arg Asn Leu His Tyr Asp  
200 205 210  
Thr Phe Leu Val Ile Arg Tyr Val Lys Arg His Leu Thr Ile Met  
215 220 225  
Met Asp Ile Asp Gly Lys His Glu Trp Arg Asp Cys Ile Glu Val  
230 235 240  
Pro Gly Val Arg Leu Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser  
245 250 255



|                                     |                         |                         |
|-------------------------------------|-------------------------|-------------------------|
| Ile Thr Gly Asp                     | Leu Ser Asp Asn His     | Asp Val Ile Ser Leu Lys |
| 260                                 | 265                     | 270                     |
| Leu Phe Glu Leu Thr Val Glu Arg Thr | Pro Glu Glu Glu Lys Leu |                         |
| 275                                 | 280                     | 285                     |
| His Arg Asp Val Phe Leu Pro Ser Val | Asp Asn Met Lys Leu Pro |                         |
| 290                                 | 295                     | 300                     |
| Glu Met Thr Ala Pro Leu Pro Pro Leu | Ser Gly Leu Ala Leu Phe |                         |
| 305                                 | 310                     | 315                     |
| Leu Ile Val Phe Phe Ser Leu Val Phe | Ser Val Phe Ala Ile Val |                         |
| 320                                 | 325                     | 330                     |
| Ile Gly Ile Ile Leu Tyr Asn Lys Trp | Gln Glu Gln Ser Arg Lys |                         |
| 335                                 | 340                     | 345                     |

Arg Phe Tyr

<210> 381  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 381  
 ccttggtcg tggcagcagt gg 22

<210> 382  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 382  
 cactctccag gctgcatgct cagg 24

<210> 383  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 383  
 gtcaaacgtt cgagtacttg aaacgggagc actcgctgtc gaagc 45

<210> 384  
 <211> 3150  
 <212> DNA  
 <213> Homo sapiens

0978399 "101501

<400> 384

ccgagccggg cgcgcagcga cggagctggg gccggcctgg gaccatgggc 50  
 gtgagtgaat tctacggatc agtctctgat ggtgggtcgt taacctcagt 100  
 ggggactcca agatttccat gaagaaaatc agttgtcttc attcaagaat 150  
 tgggggtctgg ctcaagaattc ctgcagctgg tgaaaatctg ttttctagaa 200  
 gaggtttaat taatgcctgc agtctgacat gttcccgatt tgaggtgaaa 250  
 ccatgaagag aaaatagaat acttaataat gcttttccgc aaccgcttct 300  
 tgctgctgct ggccctggct gcgctgctgg cctttgtgag cctcagcctg 350  
 cagttcttcc acctgatccc ggtgtcgact cctaagaatg gaatgagtag 400  
 caagagtcga aagagaatca tgcccgaccc tgtgacggag cccctgtga 450  
 cagaccccggt ttatgaagct cttttgtact gcaacatccc cagtgtggcc 500  
 gagcgagcga tggaaggatc tgcccgcat cattttaagc tgggtctcagt 550  
 gcatgtgttc attcgccacg gagacaggta cccactgtat gtcattccca 600  
 aaacaaagcg accagaaatt gactgcactc tgggtggctaa caggaaaccg 650  
 tatcacccaa aactggaagc tttcattagt cacatgtcaa aaggatccgg 700  
 agcctctttc gaaagcccct tgaactcctt gcctctttac ccaaaccacc 750  
 cattgtgtga gatgggagag ctacacaga caggagtgtg gcagcatttg 800  
 cagaacgggc agctgctgag ggatatctat ctaaagaaac acaaactcct 850  
 gcccaatgat tgggtctgcag accagctcta tttagagacc actgggaaaa 900  
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 tacggggaga tggccaagat cgtggatgtc cccaccaagc agcttagagc 1150  
 tgccaacccc atagactcca tgctctgcca cttctgccac aatgtcagct 1200  
 ttccctgtac cagaaatggc tgtgttgaca tggagcactt caaggtaatt 1250  
 aagaccatc agatcgagga tgaaagggaa agacgggaga agaaattgta 1300  
 cttcgggtat tctctcctgg gtgcccaccc catcctgaac caaaccatcg 1350  
 gccggatgca gcgtgccacc gagggcagga aagaagagct ctttgcctc 1400  
 tactctgctc atgatgtcac tctgtcacca gttctcagtg ccttgggcct 1450

09978299 "101501

ttcagaagcc aggttcccaa ggtttgcagc caggttgatc tttgagcttt 1500  
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ggcgctgatg tcacattcca cacctctttc tgccaagacc accacaagcg 1600  
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tgtcacaggg aaggattcta aaaggatgc agtacagcag tatagaatcc 1750  
atgccaatac agagcatagg gaaaggtcca cttctagttt tgtctgttac 1800  
taagggtaga agattattgc tttttaaagg cttaaatttg tttgtgggaa 1850  
ccacagatgg ttgggggtga acagtaagca cattgctgca atgtggtacg 1900  
tgaattgctt ggtacaaaat ggccagttca cagaggaata gaaggactt 1950  
tatcatagcc agacttcgct tagaatgcca gaataatata gttcaagacc 2000  
tgaagttgcc aatccaagtt tgcactcttc tggcctgccc catgttacta 2050  
tgtgatggaa ccagcacacc tcaacaaaa tttttttaat cttagacatt 2100  
tttaacctgt cttgttaag aatttcttga agtgatttat ctaaaataaa 2150  
ggttggcaaa cttttctgt aaagggccag attgtaaata tttcagactg 2200  
tgtggacca aagccacat acagtctctg tcataactac tcaactctgt 2250  
ttctgaagca ggaaagccac cacagacagt acataaagga atatgtgtag 2300  
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cctccagtaa cttctgctag aaacacagaa tttggtctgt atctgacact 2500  
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ttttaagtat gttctaaata tttgtctgct gtagtctatt tgctgtatat 2650  
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ttctaagacc agtttttagat gactcttatt cctgtagtaa tattcaattt 2750  
gctgtacctg cttggtggtt agaaggaggc tagaagatga attcaggcac 2800  
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 tgatttctga actaatggtg ctaattcaga gaaatggaaa gtgaaagtga 3050  
 gattctctgt tgtcatcggc attccaactt tttctctttg tttttgtcca 3100  
 gtgttgcaatt tgaatatgtc tgtttctata aataaatttt ttaagaataa 3150

<210> 385

<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala | 1   | 5   | 10  | 15 |
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile | 20  | 25  | 30  |    |
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys | 35  | 40  | 45  |    |
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro | 50  | 55  | 60  |    |
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu | 65  | 70  | 75  |    |
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser | 80  | 85  | 90  |    |
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val | 95  | 100 | 105 |    |
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala | 110 | 115 | 120 |    |
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His | 125 | 130 | 135 |    |
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser | 140 | 145 | 150 |    |
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu | 155 | 160 | 165 |    |
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu | 170 | 175 | 180 |    |
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp | 185 | 190 | 195 |    |
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr | 200 | 205 | 210 |    |

09978299-101501

|                 |                     |                     |     |
|-----------------|---------------------|---------------------|-----|
| Leu Gln Ser Gly | Leu Ala Leu Leu Tyr | Gly Phe Leu Pro Asp | Phe |
| 215             |                     | 220                 | 225 |
| Asp Trp Lys Lys | Ile Tyr Phe Arg His | Gln Pro Ser Ala Leu | Phe |
| 230             |                     | 235                 | 240 |
| Cys Ser Gly Ser | Cys Tyr Cys Pro Val | Arg Asn Gln Tyr Leu | Glu |
| 245             |                     | 250                 | 255 |
| Lys Glu Gln Arg | Arg Gln Tyr Leu Leu | Arg Leu Lys Asn Ser | Gln |
| 260             |                     | 265                 | 270 |
| Leu Glu Lys Thr | Tyr Gly Glu Met Ala | Lys Ile Val Asp Val | Pro |
| 275             |                     | 280                 | 285 |
| Thr Lys Gln Leu | Arg Ala Ala Asn Pro | Ile Asp Ser Met Leu | Cys |
| 290             |                     | 295                 | 300 |
| His Phe Cys His | Asn Val Ser Phe Pro | Cys Thr Arg Asn Gly | Cys |
| 305             |                     | 310                 | 315 |
| Val Asp Met Glu | His Phe Lys Val Ile | Lys Thr His Gln Ile | Glu |
| 320             |                     | 325                 | 330 |
| Asp Glu Arg Glu | Arg Arg Glu Lys Lys | Leu Tyr Phe Gly Tyr | Ser |
| 335             |                     | 340                 | 345 |
| Leu Leu Gly Ala | His Pro Ile Leu Asn | Gln Thr Ile Gly Arg | Met |
| 350             |                     | 355                 | 360 |
| Gln Arg Ala Thr | Glu Gly Arg Lys Glu | Glu Leu Phe Ala Leu | Tyr |
| 365             |                     | 370                 | 375 |
| Ser Ala His Asp | Val Thr Leu Ser Pro | Val Leu Ser Ala Leu | Gly |
| 380             |                     | 385                 | 390 |
| Leu Ser Glu Ala | Arg Phe Pro Arg Phe | Ala Ala Arg Leu Ile | Phe |
| 395             |                     | 400                 | 405 |
| Glu Leu Trp Gln | Asp Arg Glu Lys Pro | Ser Glu His Ser Val | Arg |
| 410             |                     | 415                 | 420 |
| Ile Leu Tyr Asn | Gly Val Asp Val Thr | Phe His Thr Ser Phe | Cys |
| 425             |                     | 430                 | 435 |
| Gln Asp His His | Lys Arg Ser Pro Lys | Pro Met Cys Pro Leu | Glu |
| 440             |                     | 445                 | 450 |
| Asn Leu Val Arg | Phe Val Lys Arg Asp | Met Phe Val Ala Leu | Gly |
| 455             |                     | 460                 | 465 |
| Gly Ser Gly Thr | Asn Tyr Tyr Asp Ala | Cys His Arg Glu Gly | Phe |
| 470             |                     | 475                 | 480 |

<210> 386  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 386  
ccaagcagct tagagctcca gacc 24

<210> 387  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 387  
ttccctatgc tctgtattgg catgg 25

<210> 388  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 388  
gccacttctg ccacaatgtc agctttccct gtaccagaaa tggctgtgtt 50

<210> 389  
<211> 3313  
<212> DNA  
<213> Homo sapiens

<400> 389  
aaaaaagctc actaaagttt ctattagagc gaatacggta gatttccatc 50  
cccttttgaa gaacagtact gtggagctat ttaagagata aaaacgaaat 100  
atcctttctg ggagttcaag attgtgcagt aattggttag gactctgagc 150  
gccgctgttc accaatcggg gagagaaaag cggagatcct gctcgccttg 200  
cacgcgcctg aagcacaaag cagatagcta ggaatgaacc atccctggga 250  
gtatgtggaa acaacggagg agctctgact tcccaactgt cccattctat 300  
gggcgaagga actgctcctg acttcagtgg ttaagggcag aattgaaaat 350  
aattctggag gaagataaga atgattcctg cgcgactgca ccgggactac 400  
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| Met | Ile | Pro | Ala | Arg | Leu | His | Arg | Asp | Tyr | Lys | Gly | Leu | Val | Leu | 1   | 5   | 10  | 15 |
| Leu | Gly | Ile | Leu | Leu | Gly | Thr | Leu | Trp | Glu | Thr | Gly | Cys | Thr | Gln | 20  | 25  | 30  |    |
| Ile | Arg | Tyr | Ser | Val | Pro | Glu | Glu | Leu | Glu | Lys | Gly | Ser | Arg | Val | 35  | 40  | 45  |    |
| Gly | Asp | Ile | Ser | Arg | Asp | Leu | Gly | Leu | Glu | Pro | Arg | Glu | Leu | Ala | 50  | 55  | 60  |    |
| Glu | Arg | Gly | Val | Arg | Ile | Ile | Pro | Arg | Gly | Arg | Thr | Gln | Leu | Phe | 65  | 70  | 75  |    |
| Ala | Leu | Asn | Pro | Arg | Ser | Gly | Ser | Leu | Val | Thr | Ala | Gly | Arg | Ile | 80  | 85  | 90  |    |
| Asp | Arg | Glu | Glu | Leu | Cys | Met | Gly | Ala | Ile | Lys | Cys | Gln | Leu | Asn | 95  | 100 | 105 |    |
| Leu | Asp | Ile | Leu | Met | Glu | Asp | Lys | Val | Lys | Ile | Tyr | Gly | Val | Glu | 110 | 115 | 120 |    |
| Val | Glu | Val | Arg | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Tyr | Phe | Arg | Glu | 125 | 130 | 135 |    |
| Ser | Glu | Leu | Glu | Ile | Lys | Ile | Ser | Glu | Asn | Ala | Ala | Thr | Glu | Met | 140 | 145 | 150 |    |
| Arg | Phe | Pro | Leu | Pro | His | Ala | Trp | Asp | Pro | Asp | Ile | Gly | Lys | Asn | 155 | 160 | 165 |    |
| Ser | Leu | Gln | Ser | Tyr | Glu | Leu | Ser | Pro | Asn | Thr | His | Phe | Ser | Leu | 170 | 175 | 180 |    |
| Ile | Val | Gln | Asn | Gly | Ala | Asp | Gly | Ser | Lys | Tyr | Pro | Glu | Leu | Val | 185 | 190 | 195 |    |
| Leu | Lys | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Lys | Ala | Ala | His | His | Leu | 200 | 205 | 210 |    |
| Val | Leu | Thr | Ala | Ser | Asp | Gly | Gly | Asp | Pro | Val | Arg | Thr | Gly | Thr | 215 | 220 | 225 |    |
| Ala | Arg | Ile | Arg | Val | Met | Val | Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | 230 | 235 | 240 |    |
| Ala | Phe | Ala | Gln | Pro | Glu | Tyr | Arg | Ala | Ser | Val | Pro | Glu | Asn | Leu | 245 | 250 | 255 |    |
| Ala | Leu | Gly | Thr | Gln | Leu | Leu | Val | Val | Asn | Ala | Thr | Asp | Pro | Asp | 260 | 265 | 270 |    |
| Glu | Gly | Val | Asn | Ala | Glu | Val | Arg | Tyr | Ser | Phe | Arg | Tyr | Val | Asp | 275 | 280 | 285 |    |
| Asp | Lys | Ala | Ala | Gln | Val | Phe | Lys | Leu | Asp | Cys | Asn | Ser | Gly | Thr |     |     |     |    |

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| 290 |     |     |     |     |     |     |     |     |  | 295 |     |     |     |     | 300 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ile | Ser | Thr | Ile | Gly | Glu | Leu | Asp | His |  | Glu | Glu | Ser | Gly | Phe | Tyr |  |  |  |  |
|     |     |     |     | 305 |     |     |     |     |  |     |     |     |     |     | 315 |  |  |  |  |
| Gln | Met | Glu | Val | Gln | Ala | Met | Asp | Asn |  | Ala | Gly | Tyr | Ser | Ala | Arg |  |  |  |  |
|     |     |     |     | 320 |     |     |     |     |  |     |     |     |     |     | 330 |  |  |  |  |
| Ala | Lys | Val | Leu | Ile | Thr | Val | Leu | Asp |  | Val | Asn | Asp | Asn | Ala | Pro |  |  |  |  |
|     |     |     |     | 335 |     |     |     |     |  |     |     |     |     |     | 345 |  |  |  |  |
| Glu | Val | Val | Leu | Thr | Ser | Leu | Ala | Ser |  | Ser | Val | Pro | Glu | Asn | Ser |  |  |  |  |
|     |     |     |     | 350 |     |     |     |     |  |     |     |     |     |     | 360 |  |  |  |  |
| Pro | Arg | Gly | Thr | Leu | Ile | Ala | Leu | Leu |  | Asn | Val | Asn | Asp | Gln | Asp |  |  |  |  |
|     |     |     |     | 365 |     |     |     |     |  |     |     |     |     |     | 375 |  |  |  |  |
| Ser | Glu | Glu | Asn | Gly | Gln | Val | Ile | Cys |  | Phe | Ile | Gln | Gly | Asn | Leu |  |  |  |  |
|     |     |     |     | 380 |     |     |     |     |  |     |     |     |     |     | 390 |  |  |  |  |
| Pro | Phe | Lys | Leu | Glu | Lys | Ser | Tyr | Gly |  | Asn | Tyr | Tyr | Ser | Leu | Val |  |  |  |  |
|     |     |     |     | 395 |     |     |     |     |  |     |     |     |     |     | 405 |  |  |  |  |
| Thr | Asp | Ile | Val | Leu | Asp | Arg | Glu | Gln |  | Val | Pro | Ser | Tyr | Asn | Ile |  |  |  |  |
|     |     |     |     | 410 |     |     |     |     |  |     |     |     |     |     | 420 |  |  |  |  |
| Thr | Val | Thr | Ala | Thr | Asp | Arg | Gly | Thr |  | Pro | Pro | Leu | Ser | Thr | Glu |  |  |  |  |
|     |     |     |     | 425 |     |     |     |     |  |     |     |     |     |     | 435 |  |  |  |  |
| Thr | His | Ile | Ser | Leu | Asn | Val | Ala | Asp |  | Thr | Asn | Asp | Asn | Pro | Pro |  |  |  |  |
|     |     |     |     | 440 |     |     |     |     |  |     |     |     |     |     | 450 |  |  |  |  |
| Val | Phe | Pro | Gln | Ala | Ser | Tyr | Ser | Ala |  | Tyr | Ile | Pro | Glu | Asn | Asn |  |  |  |  |
|     |     |     |     | 455 |     |     |     |     |  |     |     |     |     |     | 465 |  |  |  |  |
| Pro | Arg | Gly | Val | Ser | Leu | Val | Ser | Val |  | Thr | Ala | His | Asp | Pro | Asp |  |  |  |  |
|     |     |     |     | 470 |     |     |     |     |  |     |     |     |     |     | 480 |  |  |  |  |
| Cys | Glu | Glu | Asn | Ala | Gln | Ile | Thr | Tyr |  | Ser | Leu | Ala | Glu | Asn | Thr |  |  |  |  |
|     |     |     |     | 485 |     |     |     |     |  |     |     |     |     |     | 495 |  |  |  |  |
| Ile | Gln | Gly | Ala | Ser | Leu | Ser | Ser | Tyr |  | Val | Ser | Ile | Asn | Ser | Asp |  |  |  |  |
|     |     |     |     | 500 |     |     |     |     |  |     |     |     |     |     | 510 |  |  |  |  |
| Thr | Gly | Val | Leu | Tyr | Ala | Leu | Ser | Ser |  | Phe | Asp | Tyr | Glu | Gln | Phe |  |  |  |  |
|     |     |     |     | 515 |     |     |     |     |  |     |     |     |     |     | 525 |  |  |  |  |
| Arg | Asp | Leu | Gln | Val | Lys | Val | Met | Ala |  | Arg | Asp | Asn | Gly | His | Pro |  |  |  |  |
|     |     |     |     | 530 |     |     |     |     |  |     |     |     |     |     | 540 |  |  |  |  |
| Pro | Leu | Ser | Ser | Asn | Val | Ser | Leu | Ser |  | Leu | Phe | Val | Leu | Asp | Gln |  |  |  |  |
|     |     |     |     | 545 |     |     |     |     |  |     |     |     |     |     | 555 |  |  |  |  |
| Asn | Asp | Asn | Ala | Pro | Glu | Ile | Leu | Tyr |  | Pro | Ala | Leu | Pro | Thr | Asp |  |  |  |  |
|     |     |     |     | 560 |     |     |     |     |  |     |     |     |     |     | 570 |  |  |  |  |
| Gly | Ser | Thr | Gly | Val | Glu | Leu | Ala | Pro |  | Arg | Ser | Ala | Glu | Pro | Gly |  |  |  |  |
|     |     |     |     | 575 |     |     |     |     |  |     |     |     |     |     | 585 |  |  |  |  |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Tyr | Leu | Val | Thr | Lys | Val | Val | Ala | Val | Asp | Arg | Asp | Ser | Gly | Gln |  | 590 | 595 | 600 |
| Asn | Ala | Trp | Leu | Ser | Tyr | Arg | Leu | Leu | Lys | Ala | Ser | Glu | Pro | Gly |  | 605 | 610 | 615 |
| Leu | Phe | Ser | Val | Gly | Leu | His | Thr | Gly | Glu | Val | Arg | Thr | Ala | Arg |  | 620 | 625 | 630 |
| Ala | Leu | Leu | Asp | Arg | Asp | Ala | Leu | Lys | Gln | Ser | Leu | Val | Val | Ala |  | 635 | 640 | 645 |
| Val | Gln | Asp | His | Gly | Gln | Pro | Pro | Leu | Ser | Ala | Thr | Val | Thr | Leu |  | 650 | 655 | 660 |
| Thr | Val | Ala | Val | Ala | Asp | Ser | Ile | Pro | Gln | Val | Leu | Ala | Asp | Leu |  | 665 | 670 | 675 |
| Gly | Ser | Leu | Glu | Ser | Pro | Ala | Asn | Ser | Glu | Thr | Ser | Asp | Leu | Thr |  | 680 | 685 | 690 |
| Leu | Tyr | Leu | Val | Val | Ala | Val | Ala | Ala | Val | Ser | Cys | Val | Phe | Leu |  | 695 | 700 | 705 |
| Ala | Phe | Val | Ile | Leu | Leu | Leu | Ala | Leu | Arg | Leu | Arg | Arg | Trp | His |  | 710 | 715 | 720 |
| Lys | Ser | Arg | Leu | Leu | Gln | Ala | Ser | Gly | Gly | Gly | Leu | Thr | Gly | Ala |  | 725 | 730 | 735 |
| Pro | Ala | Ser | His | Phe | Val | Gly | Val | Asp | Gly | Val | Gln | Ala | Phe | Leu |  | 740 | 745 | 750 |
| Gln | Thr | Tyr | Ser | His | Glu | Val | Ser | Leu | Thr | Thr | Asp | Ser | Arg | Lys |  | 755 | 760 | 765 |
| Ser | His | Leu | Ile | Phe | Pro | Gln | Pro | Asn | Tyr | Ala | Asp | Met | Leu | Val |  | 770 | 775 | 780 |
| Ser | Gln | Glu | Ser | Phe | Glu | Lys | Ser | Glu | Pro | Leu | Leu | Leu | Ser | Gly |  | 785 | 790 | 795 |
| Asp | Ser | Val | Phe | Ser | Lys | Asp | Ser | His | Gly | Leu | Ile | Glu | Val | Ser |  | 800 | 805 | 810 |
| Leu | Tyr | Gln | Ile | Phe | Phe | Leu | Phe | Phe | Phe | Asn | Cys | Ser | Val | Ser |  | 815 | 820 | 825 |
| Gln | Ala | Gly | Val | Gln | Arg | Tyr | Asp | His | Ser | Ser | Leu | Arg | Pro | Gln |  | 830 | 835 | 840 |
| Thr | Pro | Arg | Leu | Lys | Gln | Leu | Ser | His | Leu | Cys | Leu | Arg | Cys | Asn |  | 845 | 850 | 855 |
| Arg | Asp | Tyr | Arg | Cys | Lys | Pro | Pro | Thr | Val | Cys | Leu | Ser | Ile | Tyr |  | 860 | 865 | 870 |
| Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Leu | Leu |  |     |     |     |

FOSTOT" 66284660

875

880

885

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890 895 900

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35 40 45  
Trp Gln Ala Ala Leu Phe Gln Gly Gln Gln Leu Leu Cys Gly Gly  
50 55 60  
Val Leu Val Gly Gly Asn Trp Val Leu Thr Ala Ala His Cys Lys  
65 70 75  
Lys Pro Lys Tyr Thr Val Arg Leu Gly Asp His Ser Leu Gln Asn  
80 85 90  
Lys Asp Gly Pro Glu Gln Glu Ile Pro Val Val Gln Ser Ile Pro  
95 100 105

His Pro Cys Tyr Asn Ser Ser Asp Val Glu Asp His Asn His Asp  
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 Val Lys Pro Ile Ser Leu Ala Asp His Cys Thr Gln Pro Gly Gln  
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 Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Ala Leu Gln Gly Ile  
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 cgtctgggcc aggcaggcag cgggggtggc gggactggtg actcagaagg 1850  
 ctcaggtgcc ctaccagcc tcacctgcag cctcaccccc ctgggcctgg 1900  
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 ttacaggggt cggcggcagc gtttgttcca gaacgccgcc tcccaccag 2150  
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 gacgacgtgg aataaagagc tcttttctta aaaaaa 2236

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 <211> 473  
 <212> PRT  
 <213> Homo sapiens

<400> 400  
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 1 5 10 15  
 Leu Trp Leu Gln Ala Trp Gln Val Ala Ala Pro Cys Pro Gly Ala  
 20 25 30



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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln | 35  | 40  | 45  |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln | 50  | 55  | 60  |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala | 65  | 70  | 75  |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser | 80  | 85  | 90  |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala | 95  | 100 | 105 |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser | 110 | 115 | 120 |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu | 125 | 130 | 135 |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe | 140 | 145 | 150 |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala | 155 | 160 | 165 |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu | 170 | 175 | 180 |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu | 185 | 190 | 195 |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His | 200 | 205 | 210 |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu | 215 | 220 | 225 |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala | 230 | 235 | 240 |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu | 245 | 250 | 255 |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro | 260 | 265 | 270 |
| Leu | Trp | Ala | Trp | Leu | Gln | Lys | Phe | Arg | Gly | Ser | Ser | Ser | Glu | Val | 275 | 280 | 285 |
| Pro | Cys | Ser | Leu | Pro | Gln | Arg | Leu | Ala | Gly | Arg | Asp | Leu | Lys | Arg | 290 | 295 | 300 |
| Leu | Ala | Ala | Asn | Asp | Leu | Gln | Gly | Cys | Ala | Val | Ala | Thr | Gly | Pro | 305 | 310 | 315 |
| Tyr | His | Pro | Ile | Trp | Thr | Gly | Arg | Ala | Thr | Asp | Glu | Glu | Pro | Leu |     |     |     |

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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 320                                 | 325                     | 330 |
| Gly Leu Pro Lys Cys Cys Gln Pro Asp | Ala Ala Asp Lys Ala Ser |     |
| 335                                 | 340                     | 345 |
| Val Leu Glu Pro Gly Arg Pro Ala Ser | Ala Gly Asn Ala Leu Lys |     |
| 350                                 | 355                     | 360 |
| Gly Arg Val Pro Pro Gly Asp Ser Pro | Pro Gly Asn Gly Ser Gly |     |
| 365                                 | 370                     | 375 |
| Pro Arg His Ile Asn Asp Ser Pro Phe | Gly Thr Leu Pro Gly Ser |     |
| 380                                 | 385                     | 390 |
| Ala Glu Pro Pro Leu Thr Ala Val Arg | Pro Glu Gly Ser Glu Pro |     |
| 395                                 | 400                     | 405 |
| Pro Gly Phe Pro Thr Ser Gly Pro Arg | Arg Arg Pro Gly Cys Ser |     |
| 410                                 | 415                     | 420 |
| Arg Lys Asn Arg Thr Arg Ser His Cys | Arg Leu Gly Gln Ala Gly |     |
| 425                                 | 430                     | 435 |
| Ser Gly Gly Gly Gly Thr Gly Asp Ser | Glu Gly Ser Gly Ala Leu |     |
| 440                                 | 445                     | 450 |
| Pro Ser Leu Thr Cys Ser Leu Thr Pro | Leu Gly Leu Ala Leu Val |     |
| 455                                 | 460                     | 465 |
| Leu Trp Thr Val Leu Gly Pro Cys     |                         |     |
| 470                                 |                         |     |

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 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 401  
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<210> 402  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 402  
 ccctgcaggt cattggcagc tagg 24

<210> 403  
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 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 403

aggcactgcc tgatgacacc ttccgcgacc tgggcaacct cacac 45

<210> 404

<211> 2738

<212> DNA

<213> Homo sapiens

<400> 404

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agcctcagat actggggact ttacagtccc acagaaccgt cctcccagga 150  
agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgca 200  
caaaggcaag tccttttttc ctttctcctt ttgggcttat ctctggcggg 250  
cgcgggcgaa cctagaagct attctgtggt ggaggaaact gagggcagct 300  
cctttgtcac caatttagca aaggacctgg gtctggagca gagggaattc 350  
tccaggcggg gggttagggt tgttccaga gggaacaaac tacatttgca 400  
gctcaatcag gagaccggg attgttgct aaatgagaaa ttggaccgtg 450  
aggatctgtg cggtcacaca gagccctgtg tgctacgttt ccaagtgttg 500  
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gaaaaacttc agtctatga agtcaatatt gaggcaagag atgctggaac 1150

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<210> 405  
<211> 798  
<212> PRT  
<213> Homo sapiens

<400> 405

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Ser | Gly | Lys | Leu | Ile | Cys | Arg | Gln | Arg | Gln | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Phe | Ser | Phe | Leu | Leu | Leu | Gly | Leu | Ser | Leu | Ala | Gly | Ala | Ala | Glu |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |
| Pro | Arg | Ser | Tyr | Ser | Val | Val | Glu | Glu | Thr | Glu | Gly | Ser | Ser | Phe |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |
| Val | Thr | Asn | Leu | Ala | Lys | Asp | Leu | Gly | Leu | Glu | Gln | Arg | Glu | Phe |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |
| Ser | Arg | Arg | Gly | Val | Arg | Val | Val | Ser | Arg | Gly | Asn | Lys | Leu | His |
|     |     |     | 65  |     |     |     |     |     | 70  |     |     |     |     | 75  |
| Leu | Gln | Leu | Asn | Gln | Glu | Thr | Ala | Asp | Leu | Leu | Leu | Asn | Glu | Lys |
|     |     |     | 80  |     |     |     |     |     | 85  |     |     |     |     | 90  |
| Leu | Asp | Arg | Glu | Asp | Leu | Cys | Gly | His | Thr | Glu | Pro | Cys | Val | Leu |
|     |     |     | 95  |     |     |     |     |     | 100 |     |     |     |     | 105 |
| Arg | Phe | Gln | Val | Leu | Leu | Glu | Ser | Pro | Phe | Glu | Phe | Phe | Gln | Ala |
|     |     |     | 110 |     |     |     |     |     | 115 |     |     |     |     | 120 |
| Glu | Leu | Gln | Val | Ile | Asp | Ile | Asn | Asp | His | Ser | Pro | Val | Phe | Leu |
|     |     |     | 125 |     |     |     |     |     | 130 |     |     |     |     | 135 |
| Asp | Lys | Gln | Met | Leu | Val | Lys | Val | Ser | Glu | Ser | Ser | Pro | Pro | Gly |
|     |     |     | 140 |     |     |     |     |     | 145 |     |     |     |     | 150 |
| Thr | Thr | Phe | Pro | Leu | Lys | Asn | Ala | Glu | Asp | Leu | Asp | Val | Gly | Gln |
|     |     |     | 155 |     |     |     |     |     | 160 |     |     |     |     | 165 |
| Asn | Asn | Ile | Glu | Asn | Tyr | Ile | Ile | Ser | Pro | Asn | Ser | Tyr | Phe | Arg |
|     |     |     | 170 |     |     |     |     |     | 175 |     |     |     |     | 180 |
| Val | Leu | Thr | Arg | Lys | Arg | Ser | Asp | Gly | Arg | Lys | Tyr | Pro | Glu | Leu |
|     |     |     | 185 |     |     |     |     |     | 190 |     |     |     |     | 195 |
| Val | Leu | Asp | Lys | Ala | Leu | Asp | Arg | Glu | Glu | Glu | Ala | Glu | Leu | Arg |
|     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |     | 210 |
| Leu | Thr | Leu | Thr | Ala | Leu | Asp | Gly | Gly | Ser | Pro | Pro | Arg | Ser | Gly |
|     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     | 225 |
| Thr | Ala | Gln | Val | Tyr | Ile | Glu | Val | Leu | Asp | Val | Asn | Asp | Asn | Ala |

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|   |     |     |
|---|-----|-----|
| 230   | 235 | 240 |
| Pro Glu Phe Glu Gln Pro Phe Tyr Arg Val Gln Ile Ser Glu Asp |     |     |
| 245   | 250 | 255 |
| Ser Pro Val Gly Phe Leu Val Val Lys Val Ser Ala Thr Asp Val |     |     |
| 260   | 265 | 270 |
| Asp Thr Gly Val Asn Gly Glu Ile Ser Tyr Ser Leu Phe Gln Ala |     |     |
| 275   | 280 | 285 |
| Ser Glu Glu Ile Gly Lys Thr Phe Lys Ile Asn Pro Leu Thr Gly |     |     |
| 290   | 295 | 300 |
| Glu Ile Glu Leu Lys Lys Gln Leu Asp Phe Glu Lys Leu Gln Ser |     |     |
| 305   | 310 | 315 |
| Tyr Glu Val Asn Ile Glu Ala Arg Asp Ala Gly Thr Phe Ser Gly |     |     |
| 320   | 325 | 330 |
| Lys Cys Thr Val Leu Ile Gln Val Ile Asp Val Asn Asp His Ala |     |     |
| 335   | 340 | 345 |
| Pro Glu Val Thr Met Ser Ala Phe Thr Ser Pro Ile Pro Glu Asn |     |     |
| 350   | 355 | 360 |
| Ala Pro Glu Thr Val Val Ala Leu Phe Ser Val Ser Asp Leu Asp |     |     |
| 365   | 370 | 375 |
| Ser Gly Glu Asn Gly Lys Ile Ser Cys Ser Ile Gln Glu Asp Leu |     |     |
| 380   | 385 | 390 |
| Pro Phe Leu Leu Lys Ser Ala Glu Asn Phe Tyr Thr Leu Leu Thr |     |     |
| 395   | 400 | 405 |
| Glu Arg Pro Leu Asp Arg Glu Ser Arg Ala Glu Tyr Asn Ile Thr |     |     |
| 410   | 415 | 420 |
| Ile Thr Val Thr Asp Leu Gly Thr Pro Met Leu Ile Thr Gln Leu |     |     |
| 425   | 430 | 435 |
| Asn Met Thr Val Leu Ile Ala Asp Val Asn Asp Asn Ala Pro Ala |     |     |
| 440   | 445 | 450 |
| Phe Thr Gln Thr Ser Tyr Thr Leu Phe Val Arg Glu Asn Asn Ser |     |     |
| 455   | 460 | 465 |
| Pro Ala Leu His Ile Arg Ser Val Ser Ala Thr Asp Arg Asp Ser |     |     |
| 470   | 475 | 480 |
| Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp |     |     |
| 485   | 490 | 495 |
| Pro His Leu Pro Leu Thr Ser Leu Val Ser Ile Asn Ala Asp Asn |     |     |
| 500   | 505 | 510 |
| Gly His Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Gln |     |     |
| 515   | 520 | 525 |

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FOI b6 b7C

|                                     |                         |
|-------------------------------------|-------------------------|
| Gly Phe Gln Phe Arg Val Gly Ala Ser | Asp His Gly Ser Pro Ala |
| 530                                 | 535 540                 |
| Leu Ser Ser Glu Ala Leu Val Arg Val | Val Val Leu Asp Ala Asn |
| 545                                 | 550 555                 |
| Asp Asn Ser Pro Phe Val Leu Tyr Pro | Leu Gln Asn Gly Ser Ala |
| 560                                 | 565 570                 |
| Pro Cys Thr Glu Leu Val Pro Arg Ala | Ala Glu Pro Gly Tyr Leu |
| 575                                 | 580 585                 |
| Val Thr Lys Val Val Ala Val Asp Gly | Asp Ser Gly Gln Asn Ala |
| 590                                 | 595 600                 |
| Trp Leu Ser Tyr Gln Leu Leu Lys Ala | Thr Glu Leu Gly Leu Phe |
| 605                                 | 610 615                 |
| Gly Val Trp Ala His Asn Gly Glu Val | Arg Thr Ala Arg Leu Leu |
| 620                                 | 625 630                 |
| Ser Glu Arg Asp Ala Ala Lys His Arg | Leu Val Val Leu Val Lys |
| 635                                 | 640 645                 |
| Asp Asn Gly Glu Pro Pro Arg Ser Ala | Thr Ala Thr Leu His Val |
| 650                                 | 655 660                 |
| Leu Leu Val Asp Gly Phe Ser Gln Pro | Tyr Leu Pro Leu Pro Glu |
| 665                                 | 670 675                 |
| Ala Ala Pro Thr Gln Ala Gln Ala Asp | Leu Leu Thr Val Tyr Leu |
| 680                                 | 685 690                 |
| Val Val Ala Leu Ala Ser Val Ser Ser | Leu Phe Leu Phe Ser Val |
| 695                                 | 700 705                 |
| Leu Leu Phe Val Ala Val Arg Leu Cys | Arg Arg Ser Arg Ala Ala |
| 710                                 | 715 720                 |
| Ser Val Gly Arg Cys Leu Val Pro Glu | Gly Pro Leu Pro Gly His |
| 725                                 | 730 735                 |
| Leu Val Asp Met Ser Gly Thr Arg Thr | Leu Ser Gln Ser Tyr Gln |
| 740                                 | 745 750                 |
| Tyr Glu Val Cys Leu Ala Gly Gly Ser | Gly Thr Asn Glu Phe Lys |
| 755                                 | 760 765                 |
| Phe Leu Lys Pro Ile Ile Pro Asn Phe | Pro Pro Gln Cys Pro Gly |
| 770                                 | 775 780                 |
| Lys Glu Ile Gln Gly Asn Ser Thr Phe | Pro Asn Asn Phe Gly Phe |
| 785                                 | 790 795                 |
| Asn Ile Gln                         |                         |

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<211> 23  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 406  
ctgagaacgc gcctgaaact gtg 23

<210> 407  
<211> 22  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 407  
agcgttgatca ttgacatcgg cg 22

<210> 408  
<211> 50  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

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ttagttgctc cattcaggag gatctaccct tcctcctgaa atccgcggaa 50

<210> 409  
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<212> DNA  
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cggtcgacga ccgccccgcg tcatgcggct cctcggctgg tggcaagtat 150  
tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200  
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acagggcagc agaagaggcc aatgcggtgc tggggctgga cacccaaggc 350  
gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400  
gagttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450  
caaggtgcaa cgtccgagag agccttttct ctctggatgg cgctggagca 500



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 ccccaaaggt gaactgtgag gagagaaaca ttacaggatt agaaaatttc 650  
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 aaacggtagt gactgtactc tagtctgtt ttacaccccg tgggtgccgt 750  
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 aacaactgaa tgtataaaaa aattataaac tgggtgtttta actagtattg 1350  
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<210> 410  
 <211> 360  
 <212> PRT  
 <213> Homo sapiens

<400> 410  
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 Arg Gly Val Glu Val Ala Glu Glu Ser Gly Arg Leu Trp Ser Glu  
 35 40 45  
 Glu Gln Pro Ala His Pro Leu Gln Val Gly Ala Val Tyr Leu Gly  
 50 55 60  
 Glu Glu Glu Leu Leu His Asp Pro Met Gly Gln Asp Arg Ala Ala  
 65 70 75  
 Glu Glu Ala Asn Ala Val Leu Gly Leu Asp Thr Gln Gly Asp His

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| 80  | 85  | 90  |
|---|-----|-----|
| Met Val Met Leu Ser Val Ile Pro Gly Glu Ala Glu Asp Lys Val |     |     |
| 95  | 100 | 105 |
| Ser Ser Glu Pro Ser Gly Val Thr Cys Gly Ala Gly Gly Ala Glu |     |     |
| 110   | 115 | 120 |
| Asp Ser Arg Cys Asn Val Arg Glu Ser Leu Phe Ser Leu Asp Gly |     |     |
| 125   | 130 | 135 |
| Ala Gly Ala His Phe Pro Asp Arg Glu Glu Glu Tyr Tyr Thr Glu |     |     |
| 140   | 145 | 150 |
| Pro Glu Val Ala Glu Ser Asp Ala Ala Pro Thr Glu Asp Ser Asn |     |     |
| 155   | 160 | 165 |
| Asn Thr Glu Ser Leu Lys Ser Pro Lys Val Asn Cys Glu Glu Arg |     |     |
| 170   | 175 | 180 |
| Asn Ile Thr Gly Leu Glu Asn Phe Thr Leu Lys Ile Leu Asn Met |     |     |
| 185   | 190 | 195 |
| Ser Gln Asp Leu Met Asp Phe Leu Asn Pro Asn Gly Ser Asp Cys |     |     |
| 200   | 205 | 210 |
| Thr Leu Val Leu Phe Tyr Thr Pro Trp Cys Arg Phe Ser Ala Ser |     |     |
| 215   | 220 | 225 |
| Leu Ala Pro His Phe Asn Ser Leu Pro Arg Ala Phe Pro Ala Leu |     |     |
| 230   | 235 | 240 |
| His Phe Leu Ala Leu Asp Ala Ser Gln His Ser Ser Leu Ser Thr |     |     |
| 245   | 250 | 255 |
| Arg Phe Gly Thr Val Ala Val Pro Asn Ile Leu Leu Phe Gln Gly |     |     |
| 260   | 265 | 270 |
| Ala Lys Pro Met Ala Arg Phe Asn His Thr Asp Arg Thr Leu Glu |     |     |
| 275   | 280 | 285 |
| Thr Leu Lys Ile Phe Ile Phe Asn Gln Thr Gly Ile Glu Ala Lys |     |     |
| 290   | 295 | 300 |
| Lys Asn Val Val Val Thr Gln Ala Asp Gln Ile Gly Pro Leu Pro |     |     |
| 305   | 310 | 315 |
| Ser Thr Leu Ile Lys Ser Val Asp Trp Leu Leu Val Phe Ser Leu |     |     |
| 320   | 325 | 330 |
| Phe Phe Leu Ile Ser Phe Ile Met Tyr Ala Thr Ile Arg Thr Glu |     |     |
| 335   | 340 | 345 |
| Ser Ile Arg Trp Leu Ile Pro Gly Gln Glu Gln Glu His Val Glu |     |     |
| 350   | 355 | 360 |

<210> 411  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 411  
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<210> 412  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 412  
ccacatgttc ctgctcttgt cctgg 25

<210> 413  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 413  
cggtagtgac tgtactctag tcctgtttta caccocgtgg tgccg 45

<210> 414  
<211> 1196  
<212> DNA  
<213> Homo sapiens

<400> 414  
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ggctcggcgc gggggtctt cctctttggc cagcccgaact tctcctacaa 150  
gcgcagcaat tgcaagcca tcccgggtcaa cctgcagctg tgccacggca 200  
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<210> 415  
<211> 295  
<212> PRT  
<213> Homo sapiens

<400> 415  
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Pro Asp Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Val  
35 40 45  
Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu  
50 55 60  
Pro Asn Leu Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln  
65 70 75  
Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp  
80 85 90  
Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp  
95 100 105  
Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln  
110 115 120  
Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro  
125 130 135

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Pro | Asp | Met | Leu | Glu | Cys | Asp | Arg | Phe | Pro | Gln | Asp | Asn | Asp | 140 | 145 | 150 |
| Leu | Cys | Ile | Pro | Leu | Ala | Ser | Ser | Asp | His | Leu | Leu | Pro | Ala | Thr | 155 | 160 | 165 |
| Glu | Glu | Ala | Pro | Lys | Val | Cys | Glu | Ala | Cys | Lys | Asn | Lys | Asn | Asp | 170 | 175 | 180 |
| Asp | Asp | Asn | Asp | Ile | Met | Glu | Thr | Leu | Cys | Lys | Asn | Asp | Phe | Ala | 185 | 190 | 195 |
| Leu | Lys | Ile | Lys | Val | Lys | Glu | Ile | Thr | Tyr | Ile | Asn | Arg | Asp | Thr | 200 | 205 | 210 |
| Lys | Ile | Ile | Leu | Glu | Thr | Lys | Ser | Lys | Thr | Ile | Tyr | Lys | Leu | Asn | 215 | 220 | 225 |
| Gly | Val | Ser | Glu | Arg | Asp | Leu | Lys | Lys | Ser | Val | Leu | Trp | Leu | Lys | 230 | 235 | 240 |
| Asp | Ser | Leu | Gln | Cys | Thr | Cys | Glu | Glu | Met | Asn | Asp | Ile | Asn | Ala | 245 | 250 | 255 |
| Pro | Tyr | Leu | Val | Met | Gly | Gln | Lys | Gln | Gly | Gly | Glu | Leu | Val | Ile | 260 | 265 | 270 |
| Thr | Ser | Val | Lys | Arg | Trp | Gln | Lys | Gly | Gln | Arg | Glu | Phe | Lys | Arg | 275 | 280 | 285 |
| Ile | Ser | Arg | Ser | Ile | Arg | Lys | Leu | Gln | Cys |     |     |     |     |     | 290 | 295 |     |

<210> 416  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 416  
 cctggctcgc tgctgctgct c 21

<210> 417  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 417  
 cctcacaggt gcaactgcaag ctgtc 25

<210> 418  
 <211> 47  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 418

ctcttcctct ttggccagcc cgacttctcc tacaagcgca gaattgc 47

<210> 419

<211> 1830

<212> DNA

<213> Homo sapiens

<400> 419

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cgctgggtgt tctgtctcgc gatcagcctg ctcaactgct ccaacgccac 150  
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<210> 420  
 <211> 560  
 <212> PRT  
 <213> Homo sapiens

<400> 420  
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 20 25 30  
 Val Phe Leu Leu Ala Ile Ser Leu Leu Asn Cys Ser Asn Ala Thr  
 35 40 45  
 Leu Trp Leu Ser Phe Ala Pro Val Ala Asp Val Ile Ala Glu Asp  
 50 55 60  
 Leu Val Leu Ser Met Glu Gln Ile Asn Trp Leu Ser Leu Val Tyr  
 65 70 75  
 Leu Val Val Ser Thr Pro Phe Gly Val Ala Ala Ile Trp Ile Leu  
 80 85 90  
 Asp Ser Val Gly Leu Arg Ala Ala Thr Ile Leu Gly Ala Trp Leu  
 95 100 105  
 Asn Phe Ala Gly Ser Val Leu Arg Met Val Pro Cys Met Val Val

09978299-101501

| 110  | 115 | 120 |
|--|-----|-----|
| Gly Thr Gln Asn Pro Phe Ala Phe Leu Met Gly Gly Gln Ser Leu<br>125 | 130 | 135 |
| Cys Ala Leu Ala Gln Ser Leu Val Ile Phe Ser Pro Ala Lys Leu<br>140 | 145 | 150 |
| Ala Ala Leu Trp Phe Pro Glu His Gln Arg Ala Thr Ala Asn Met<br>155 | 160 | 165 |
| Leu Ala Thr Met Ser Asn Pro Leu Gly Val Leu Val Ala Asn Val<br>170 | 175 | 180 |
| Leu Ser Pro Val Leu Val Lys Lys Gly Glu Asp Ile Pro Leu Met<br>185 | 190 | 195 |
| Leu Gly Val Tyr Thr Ile Pro Ala Gly Val Val Cys Leu Leu Ser<br>200 | 205 | 210 |
| Thr Ile Cys Leu Trp Glu Ser Val Pro Pro Thr Pro Pro Ser Ala<br>215 | 220 | 225 |
| Gly Ala Ala Ser Ser Thr Ser Glu Lys Phe Leu Asp Gly Leu Lys<br>230 | 235 | 240 |
| Leu Gln Leu Met Trp Asn Lys Ala Tyr Val Ile Leu Ala Val Cys<br>245 | 250 | 255 |
| Leu Gly Gly Met Ile Gly Ile Ser Ala Ser Phe Ser Ala Leu Leu<br>260 | 265 | 270 |
| Glu Gln Ile Leu Cys Ala Ser Gly His Ser Ser Gly Phe Ser Gly<br>275 | 280 | 285 |
| Leu Cys Gly Ala Leu Phe Ile Thr Phe Gly Ile Leu Gly Ala Leu<br>290 | 295 | 300 |
| Ala Leu Gly Pro Tyr Val Asp Arg Thr Lys His Phe Thr Glu Ala<br>305 | 310 | 315 |
| Thr Lys Ile Gly Leu Cys Leu Phe Ser Leu Ala Cys Val Pro Phe<br>320 | 325 | 330 |
| Ala Leu Val Ser Gln Leu Gln Gly Gln Thr Leu Ala Leu Ala Ala<br>335 | 340 | 345 |
| Thr Cys Ser Leu Leu Gly Leu Phe Gly Phe Ser Val Gly Pro Val<br>350 | 355 | 360 |
| Ala Met Glu Leu Ala Val Glu Cys Ser Phe Pro Val Gly Glu Gly<br>365 | 370 | 375 |
| Ala Ala Thr Gly Met Ile Phe Val Leu Gly Gln Ala Glu Gly Ile<br>380 | 385 | 390 |
| Leu Ile Met Leu Ala Met Thr Ala Leu Thr Val Arg Arg Ser Glu<br>395 | 400 | 405 |



Pro Ser Leu Ser Thr Cys Gln Gln Gly Glu Asp Pro Leu Asp Trp  
 410 415 420  
 Thr Val Ser Leu Leu Leu Met Ala Gly Leu Cys Thr Phe Phe Ser  
 425 430 435  
 Cys Ile Leu Ala Val Phe Phe His Thr Pro Tyr Arg Arg Leu Gln  
 440 445 450  
 Ala Glu Ser Gly Glu Pro Pro Ser Thr Arg Asn Ala Val Gly Gly  
 455 460 465  
 Ala Asp Ser Gly Pro Gly Val Asp Arg Gly Gly Ala Gly Arg Ala  
 470 475 480  
 Gly Val Leu Gly Pro Ser Thr Ala Thr Pro Glu Cys Thr Ala Arg  
 485 490 495  
 Gly Ala Ser Leu Glu Asp Pro Arg Gly Pro Gly Ser Pro His Pro  
 500 505 510  
 Ala Cys His Arg Ala Thr Pro Arg Ala Gln Gly Pro Ala Ala Thr  
 515 520 525  
 Asp Ala Pro Ser Arg Pro Gly Arg Leu Ala Gly Arg Val Gln Ala  
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 545 550 555  
 Pro Trp Val Ile Thr  
 560

<210> 421  
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 <212> DNA  
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 <223> Synthetic oligonucleotide probe  
  
 <400> 421  
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 <210> 422  
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 <212> DNA  
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 <223> Synthetic oligonucleotide probe  
  
 <400> 422  
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 <210> 423  
 <211> 43  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 423

tatgtggacc ggaccaagca cttcactgag gccaccaaga ttg 43

<210> 424

<211> 4313

<212> DNA

<213> Homo sapiens

<400> 424

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tggcaattct tgatcggcgt ttggacatct cagatcgctt ccaatgaaga 150  
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aaggttgtgc cggcagctct gggggaagga gcacggggct gatcaagcca 250  
tccaggaaac actggaggac ttgtccagcc ttgaaagaac tctagtgggt 300  
tctgaatcta gcccacttgg cggtaagcat gatgcaactt ctgcaacttc 350  
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caggaggtag ccactctcac ggtgaaatac caagtgtcag aggaagtgcc 450  
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 aaaaaaaaaa aaa 4313

<210> 425  
 <211> 1184  
 <212> PRT  
 <213> Homo sapiens

<400> 425  
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 20 25 30  
 Thr Val Lys Tyr Gln Val Ser Glu Glu Val Pro Ser Gly Thr Val  
 35 40 45  
 Ile Gly Lys Leu Ser Gln Glu Leu Gly Arg Glu Glu Arg Arg Arg  
 50 55 60  
 Gln Ala Gly Ala Ala Phe Gln Val Leu Gln Leu Pro Gln Ala Leu  
 65 70 75  
 Pro Ile Gln Val Asp Ser Glu Glu Gly Leu Leu Ser Thr Gly Arg  
 80 85 90  
 Arg Leu Asp Arg Glu Gln Leu Cys Arg Gln Trp Asp Pro Cys Leu  
 95 100 105  
 Val Ser Phe Asp Val Leu Ala Thr Gly Asp Leu Ala Leu Ile His  
 110 115 120  
 Val Glu Ile Gln Val Leu Asp Ile Asn Asp His Gln Pro Arg Phe  
 125 130 135  
 Pro Lys Gly Glu Gln Glu Leu Glu Ile Ser Glu Ser Ala Ser Leu  
 140 145 150  
 Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly  
 155 160 165  
 Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe  
 170 175 180  
 Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr Lys His Ala Glu  
 185 190 195

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|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Leu Ile Val Val | Lys Glu Leu Asp Arg | Glu Ile His Ser Phe Phe |
| 200             | 205                 | 210                     |
| Asp Leu Val Leu | Thr Ala Tyr Asp Asn | Gly Asn Pro Pro Lys Ser |
| 215             | 220                 | 225                     |
| Gly Thr Ser Leu | Val Lys Val Asn Val | Leu Asp Ser Asn Asp Asn |
| 230             | 235                 | 240                     |
| Ser Pro Ala Phe | Ala Glu Ser Ser Leu | Ala Leu Glu Ile Gln Glu |
| 245             | 250                 | 255                     |
| Asp Ala Ala Pro | Gly Thr Leu Leu Ile | Lys Leu Thr Ala Thr Asp |
| 260             | 265                 | 270                     |
| Pro Asp Gln Gly | Pro Asn Gly Glu Val | Glu Phe Phe Leu Ser Lys |
| 275             | 280                 | 285                     |
| His Met Pro Pro | Glu Val Leu Asp Thr | Phe Ser Ile Asp Ala Lys |
| 290             | 295                 | 300                     |
| Thr Gly Gln Val | Ile Leu Arg Arg Pro | Leu Asp Tyr Glu Lys Asn |
| 305             | 310                 | 315                     |
| Pro Ala Tyr Glu | Val Asp Val Gln Ala | Arg Asp Leu Gly Pro Asn |
| 320             | 325                 | 330                     |
| Pro Ile Pro Ala | His Cys Lys Val Leu | Ile Lys Val Leu Asp Val |
| 335             | 340                 | 345                     |
| Asn Asp Asn Ile | Pro Ser Ile His Val | Thr Trp Ala Ser Gln Pro |
| 350             | 355                 | 360                     |
| Ser Leu Val Ser | Glu Ala Leu Pro Lys | Asp Ser Phe Ile Ala Leu |
| 365             | 370                 | 375                     |
| Val Met Ala Asp | Asp Leu Asp Ser Gly | His Asn Gly Leu Val His |
| 380             | 385                 | 390                     |
| Cys Trp Leu Ser | Gln Glu Leu Gly His | Phe Arg Leu Lys Arg Thr |
| 395             | 400                 | 405                     |
| Asn Gly Asn Thr | Tyr Met Leu Leu Thr | Asn Ala Thr Leu Asp Arg |
| 410             | 415                 | 420                     |
| Glu Gln Trp Pro | Lys Tyr Thr Leu Thr | Leu Leu Ala Gln Asp Gln |
| 425             | 430                 | 435                     |
| Gly Leu Gln Pro | Leu Ser Ala Lys Lys | Gln Leu Ser Ile Gln Ile |
| 440             | 445                 | 450                     |
| Ser Asp Ile Asn | Asp Asn Ala Pro Val | Phe Glu Lys Ser Arg Tyr |
| 455             | 460                 | 465                     |
| Glu Val Ser Thr | Arg Glu Asn Asn Leu | Pro Ser Leu His Leu Ile |
| 470             | 475                 | 480                     |
| Thr Ile Lys Ala | His Asp Ala Asp Leu | Gly Ile Asn Gly Lys Val |

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| 485                                 | 490                     | 495 |
|-------------------------------------|-------------------------|-----|
| Ser Tyr Arg Ile Gln Asp Ser Pro Val | Ala His Leu Val Ala Ile |     |
| 500                                 | 505                     | 510 |
| Asp Ser Asn Thr Gly Glu Val Thr Ala | Gln Arg Ser Leu Asn Tyr |     |
| 515                                 | 520                     | 525 |
| Glu Glu Met Ala Gly Phe Glu Phe Gln | Val Ile Ala Glu Asp Ser |     |
| 530                                 | 535                     | 540 |
| Gly Gln Pro Met Leu Ala Ser Ser Val | Ser Val Trp Val Ser Leu |     |
| 545                                 | 550                     | 555 |
| Leu Asp Ala Asn Asp Asn Ala Pro Glu | Val Val Gln Pro Val Leu |     |
| 560                                 | 565                     | 570 |
| Ser Asp Gly Lys Ala Ser Leu Ser Val | Leu Val Asn Ala Ser Thr |     |
| 575                                 | 580                     | 585 |
| Gly His Leu Leu Val Pro Ile Glu Thr | Pro Asn Gly Leu Gly Pro |     |
| 590                                 | 595                     | 600 |
| Ala Gly Thr Asp Thr Pro Pro Leu Ala | Thr His Ser Ser Arg Pro |     |
| 605                                 | 610                     | 615 |
| Phe Leu Leu Thr Thr Ile Val Ala Arg | Asp Ala Asp Ser Gly Ala |     |
| 620                                 | 625                     | 630 |
| Asn Gly Glu Pro Leu Tyr Ser Ile Arg | Asn Gly Asn Glu Ala His |     |
| 635                                 | 640                     | 645 |
| Leu Phe Ile Leu Asn Pro His Thr Gly | Gln Leu Phe Val Asn Val |     |
| 650                                 | 655                     | 660 |
| Thr Asn Ala Ser Ser Leu Ile Gly Ser | Glu Trp Glu Leu Glu Ile |     |
| 665                                 | 670                     | 675 |
| Val Val Glu Asp Gln Gly Ser Pro Pro | Leu Gln Thr Arg Ala Leu |     |
| 680                                 | 685                     | 690 |
| Leu Arg Val Met Phe Val Thr Ser Val | Asp His Leu Arg Asp Ser |     |
| 695                                 | 700                     | 705 |
| Ala Arg Lys Pro Gly Ala Leu Ser Met | Ser Met Leu Thr Val Ile |     |
| 710                                 | 715                     | 720 |
| Cys Leu Ala Val Leu Leu Gly Ile Phe | Gly Leu Ile Leu Ala Leu |     |
| 725                                 | 730                     | 735 |
| Phe Met Ser Ile Cys Arg Thr Glu Lys | Lys Asp Asn Arg Ala Tyr |     |
| 740                                 | 745                     | 750 |
| Asn Cys Arg Glu Ala Glu Ser Thr Tyr | Arg Gln Gln Pro Lys Arg |     |
| 755                                 | 760                     | 765 |
| Pro Gln Lys His Ile Gln Lys Ala Asp | Ile His Leu Val Pro Val |     |
| 770                                 | 775                     | 780 |

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|   |      |      |      |
|---|------|------|------|
| Leu Arg Gly Gln Ala Gly Glu Pro Cys Glu Val Gly Gln Ser His | 785  | 790  | 795  |
| Lys Asp Val Asp Lys Glu Ala Met Met Glu Ala Gly Trp Asp Pro | 800  | 805  | 810  |
| Cys Leu Gln Ala Pro Phe His Leu Thr Pro Thr Leu Tyr Arg Thr | 815  | 820  | 825  |
| Leu Arg Asn Gln Gly Asn Gln Gly Ala Pro Ala Glu Ser Arg Glu | 830  | 835  | 840  |
| Val Leu Gln Asp Thr Val Asn Leu Leu Phe Asn His Pro Arg Gln | 845  | 850  | 855  |
| Arg Asn Ala Ser Arg Glu Asn Leu Asn Leu Pro Glu Pro Gln Pro | 860  | 865  | 870  |
| Ala Thr Gly Gln Pro Arg Ser Arg Pro Leu Lys Val Ala Gly Ser | 875  | 880  | 885  |
| Pro Thr Gly Arg Leu Ala Gly Asp Gln Gly Ser Glu Glu Ala Pro | 890  | 895  | 900  |
| Gln Arg Pro Pro Ala Ser Ser Ala Thr Leu Arg Arg Gln Arg His | 905  | 910  | 915  |
| Leu Asn Gly Lys Val Ser Pro Glu Lys Glu Ser Gly Pro Arg Gln | 920  | 925  | 930  |
| Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe Ala Glu | 935  | 940  | 945  |
| Arg Asn Pro Val Glu Glu Leu Thr Val Asp Ser Pro Pro Val Gln | 950  | 955  | 960  |
| Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln | 965  | 970  | 975  |
| Pro Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly | 980  | 985  | 990  |
| Gly Ser Arg Ser Ala Ile Pro Asp Thr Asp Gly Pro Ser Ala Arg | 995  | 1000 | 1005 |
| Ala Gly Gly Gln Thr Asp Pro Glu Gln Glu Glu Gly Pro Leu Asp | 1010 | 1015 | 1020 |
| Pro Glu Glu Asp Leu Ser Val Lys Gln Leu Leu Glu Glu Glu Leu | 1025 | 1030 | 1035 |
| Ser Ser Leu Leu Asp Pro Ser Thr Gly Leu Ala Leu Asp Arg Leu | 1040 | 1045 | 1050 |
| Ser Ala Pro Asp Pro Ala Trp Met Ala Arg Leu Ser Leu Pro Leu | 1055 | 1060 | 1065 |
| Thr Thr Asn Tyr Arg Asp Asn Val Ile Ser Pro Asp Ala Ala Ala |      |      |      |



1070

1075

1080

Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala  
 1085 1090 1095

Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val  
 1100 1105 1110

Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser  
 1115 1120 1125

Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser  
 1130 1135 1140

Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala  
 1145 1150 1155

Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr  
 1160 1165 1170

Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu  
 1175 1180

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&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic oligonucleotide probe

&lt;400&gt; 426

gtaagcacat gcctccagag gtgc 24

&lt;210&gt; 427

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic oligonucleotide probe

&lt;400&gt; 427

gtgacgtgga tgcttgggat gttg 24

&lt;210&gt; 428

&lt;211&gt; 50

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic oligonucleotide probe

&lt;400&gt; 428

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&lt;210&gt; 429

&lt;211&gt; 2037

<212> DNA

<213> Homo sapiens

<400> 429

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gatacgtcag tatgtgtac aggtgatctt ctccgtgacg tttgcatttt 300  
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gatcctggtt ttcattggtgc ctttttacat tggctatttt attgtgagca 450  
atatccgact actgcataaa caacgactgc ttttttctg tctcttatgg 500  
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20 25 30  
Lys Asp Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser  
35 40 45  
Val Thr Phe Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe  
50 55 60  
Glu Ile Leu Gly Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp  
65 70 75  
Lys Met Asn Leu Cys Val Ile Leu Leu Ile Leu Val Phe Met Val  
80 85 90  
Pro Phe Tyr Ile Gly Tyr Phe Ile Val Ser Asn Ile Arg Leu Leu  
95 100 105  
His Lys Gln Arg Leu Leu Phe Ser Cys Leu Leu Trp Leu Thr Phe  
110 115 120

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|   |                         |
|---|-------------------------|
| Met Tyr Phe Phe Trp Lys Leu Gly Asp                         | Pro Phe Pro Ile Leu Ser |
| 125   | 130 135                 |
| Pro Lys His Gly Ile Leu Ser Ile Glu Gln Leu Ile Ser Arg Val |                         |
| 140   | 145 150                 |
| Gly Val Ile Gly Val Thr Leu Met Ala Leu Leu Ser Gly Phe Gly |                         |
| 155   | 160 165                 |
| Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr Phe Leu Arg Asn |                         |
| 170   | 175 180                 |
| Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg Leu Leu Gln |                         |
| 185   | 190 195                 |
| Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met Ala |                         |
| 200   | 205 210                 |
| Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser |                         |
| 215   | 220 225                 |
| Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly |                         |
| 230   | 235 240                 |
| Ser Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu |                         |
| 245   | 250 255                 |
| Glu Leu Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala |                         |
| 260   | 265 270                 |
| Thr Lys Glu Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr |                         |
| 275   | 280 285                 |
| Phe Asn Phe Leu Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys |                         |
| 290   | 295 300                 |
| Ile Phe Met Ala Thr Ile Asn Ile Val Phe Asp Arg Val Gly Lys |                         |
| 305   | 310 315                 |
| Thr Asp Pro Val Thr Arg Gly Ile Glu Ile Thr Val Asn Tyr Leu |                         |
| 320   | 325 330                 |
| Gly Ile Gln Phe Asp Val Lys Phe Trp Ser Gln His Ile Ser Phe |                         |
| 335   | 340 345                 |
| Ile Leu Val Gly Ile Ile Ile Val Thr Ser Ile Arg Gly Leu Leu |                         |
| 350   | 355 360                 |
| Ile Thr Leu Thr Lys Phe Phe Tyr Ala Ile Ser Ser Ser Lys Ser |                         |
| 365   | 370 375                 |
| Ser Asn Val Ile Val Leu Leu Leu Ala Gln Ile Met Gly Met Tyr |                         |
| 380   | 385 390                 |
| Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser Met Pro Leu Glu |                         |
| 395   | 400 405                 |
| Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu Gln Phe Asn |                         |

|   |     |     |
|---|-----|-----|
| 410   | 415 | 420 |
| Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser Ala Leu |     |     |
| 425   | 430 | 435 |
| Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro Glu |     |     |
| 440   | 445 | 450 |
| Lys Gln Met Ala Pro   |     |     |
| 455   |     |     |

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 <222> 78, 81, 113, 157, 224, 297  
 <223> unknown base

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 <223> unknown base

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 cattctc 457

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a 3951

<210> 437  
<211> 1141  
<212> PRT  
<213> Homo sapiens

<400> 437

Met Ala Gly Ala Arg Ser Arg Asp Pro Trp Gly Ala Ser Gly Ile  
1 5 10 15

Cys Tyr Leu Phe Gly Ser Leu Leu Val Glu Leu Leu Phe Ser Arg  
20 25 30

Ala Val Ala Phe Asn Leu Asp Val Met Gly Ala Leu Arg Lys Glu  
35 40 45

Gly Glu Pro Gly Ser Leu Phe Gly Phe Ser Val Ala Leu His Arg  
50 55 60

Gln Leu Gln Pro Arg Pro Gln Ser Trp Leu Leu Val Gly Ala Pro  
65 70 75

Gln Ala Leu Ala Leu Pro Gly Gln Gln Ala Asn Arg Thr Gly Gly

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| 80                                  | 85                      | 90  |
|-------------------------------------|-------------------------|-----|
| Leu Phe Ala Cys Pro Leu Ser Leu Glu | Glu Thr Asp Cys Tyr Arg |     |
| 95                                  | 100                     | 105 |
| Val Asp Ile Asp Gln Gly Ala Asp Met | Gln Lys Glu Ser Lys Glu |     |
| 110                                 | 115                     | 120 |
| Asn Gln Trp Leu Gly Val Ser Val Arg | Ser Gln Gly Pro Gly Gly |     |
| 125                                 | 130                     | 135 |
| Lys Ile Val Thr Cys Ala His Arg Tyr | Glu Ala Arg Gln Arg Val |     |
| 140                                 | 145                     | 150 |
| Asp Gln Ile Leu Glu Thr Arg Asp Met | Ile Gly Arg Cys Phe Val |     |
| 155                                 | 160                     | 165 |
| Leu Ser Gln Asp Leu Ala Ile Arg Asp | Glu Leu Asp Gly Gly Glu |     |
| 170                                 | 175                     | 180 |
| Trp Lys Phe Cys Glu Gly Arg Pro Gln | Gly His Glu Gln Phe Gly |     |
| 185                                 | 190                     | 195 |
| Phe Cys Gln Gln Gly Thr Ala Ala Ala | Phe Ser Pro Asp Ser His |     |
| 200                                 | 205                     | 210 |
| Tyr Leu Leu Phe Gly Ala Pro Gly Thr | Tyr Asn Trp Lys Gly Thr |     |
| 215                                 | 220                     | 225 |
| Ala Arg Val Glu Leu Cys Ala Gln Gly | Ser Ala Asp Leu Ala His |     |
| 230                                 | 235                     | 240 |
| Leu Asp Asp Gly Pro Tyr Glu Ala Gly | Gly Glu Lys Glu Gln Asp |     |
| 245                                 | 250                     | 255 |
| Pro Arg Leu Ile Pro Val Pro Ala Asn | Ser Tyr Phe Gly Phe Ser |     |
| 260                                 | 265                     | 270 |
| Ile Asp Ser Gly Lys Gly Leu Val Arg | Ala Glu Glu Leu Ser Phe |     |
| 275                                 | 280                     | 285 |
| Val Ala Gly Ala Pro Arg Ala Asn His | Lys Gly Ala Val Val Ile |     |
| 290                                 | 295                     | 300 |
| Leu Arg Lys Asp Ser Ala Ser Arg Leu | Val Pro Glu Val Met Leu |     |
| 305                                 | 310                     | 315 |
| Ser Gly Glu Arg Leu Thr Ser Gly Phe | Gly Tyr Ser Leu Ala Val |     |
| 320                                 | 325                     | 330 |
| Ala Asp Leu Asn Ser Asp Gly Trp Pro | Asp Leu Ile Val Gly Ala |     |
| 335                                 | 340                     | 345 |
| Pro Tyr Phe Phe Glu Arg Gln Glu Glu | Leu Gly Gly Ala Val Tyr |     |
| 350                                 | 355                     | 360 |
| Val Tyr Leu Asn Gln Gly Gly His Trp | Ala Gly Ile Ser Pro Leu |     |
| 365                                 | 370                     | 375 |

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|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Arg Leu Cys Gly | Ser Pro Asp Ser Met | Phe Gly Ile Ser Leu Ala | 380 | 385 | 390 |
| Val Leu Gly Asp | Leu Asn Gln Asp Gly | Phe Pro Asp Ile Ala Val | 395 | 400 | 405 |
| Gly Ala Pro Phe | Asp Gly Asp Gly Lys | Val Phe Ile Tyr His Gly | 410 | 415 | 420 |
| Ser Ser Leu Gly | Val Val Ala Lys Pro | Ser Gln Val Leu Glu Gly | 425 | 430 | 435 |
| Glu Ala Val Gly | Ile Lys Ser Phe Gly | Tyr Ser Leu Ser Gly Ser | 440 | 445 | 450 |
| Leu Asp Met Asp | Gly Asn Gln Tyr Pro | Asp Leu Leu Val Gly Ser | 455 | 460 | 465 |
| Leu Ala Asp Thr | Ala Val Leu Phe Arg | Ala Arg Pro Ile Leu His | 470 | 475 | 480 |
| Val Ser His Glu | Val Ser Ile Ala Pro | Arg Ser Ile Asp Leu Glu | 485 | 490 | 495 |
| Gln Pro Asn Cys | Ala Gly Gly His Ser | Val Cys Val Asp Leu Arg | 500 | 505 | 510 |
| Val Cys Phe Ser | Tyr Ile Ala Val Pro | Ser Ser Tyr Ser Pro Thr | 515 | 520 | 525 |
| Val Ala Leu Asp | Tyr Val Leu Asp Ala | Asp Thr Asp Arg Arg Leu | 530 | 535 | 540 |
| Arg Gly Gln Val | Pro Arg Val Thr Phe | Leu Ser Arg Asn Leu Glu | 545 | 550 | 555 |
| Glu Pro Lys His | Gln Ala Ser Gly Thr | Val Trp Leu Lys His Gln | 560 | 565 | 570 |
| His Asp Arg Val | Cys Gly Asp Ala Met | Phe Gln Leu Gln Glu Asn | 575 | 580 | 585 |
| Val Lys Asp Lys | Leu Arg Ala Ile Val | Val Thr Leu Ser Tyr Ser | 590 | 595 | 600 |
| Leu Gln Thr Pro | Arg Leu Arg Arg Gln | Ala Pro Gly Gln Gly Leu | 605 | 610 | 615 |
| Pro Pro Val Ala | Pro Ile Leu Asn Ala | His Gln Pro Ser Thr Gln | 620 | 625 | 630 |
| Arg Ala Glu Ile | His Phe Leu Lys Gln | Gly Cys Gly Glu Asp Lys | 635 | 640 | 645 |
| Ile Cys Gln Ser | Asn Leu Gln Leu Val | His Ala Arg Phe Cys Thr | 650 | 655 | 660 |
| Arg Val Ser Asp | Thr Glu Phe Gln Pro | Leu Pro Met Asp Val Asp |     |     |     |

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|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| 665             | 670                 | 675                     |
| Gly Thr Thr Ala | Leu Phe Ala Leu Ser | Gly Gln Pro Val Ile Gly |
| 680             | 685                 | 690                     |
| Leu Glu Leu Met | Val Thr Asn Leu Pro | Ser Asp Pro Ala Gln Pro |
| 695             | 700                 | 705                     |
| Gln Ala Asp Gly | Asp Asp Ala His Glu | Ala Gln Leu Leu Val Met |
| 710             | 715                 | 720                     |
| Leu Pro Asp Ser | Leu His Tyr Ser Gly | Val Arg Ala Leu Asp Pro |
| 725             | 730                 | 735                     |
| Ala Glu Lys Pro | Leu Cys Leu Ser Asn | Glu Asn Ala Ser His Val |
| 740             | 745                 | 750                     |
| Glu Cys Glu Leu | Gly Asn Pro Met Lys | Arg Gly Ala Gln Val Thr |
| 755             | 760                 | 765                     |
| Phe Tyr Leu Ile | Leu Ser Thr Ser Gly | Ile Ser Ile Glu Thr Thr |
| 770             | 775                 | 780                     |
| Glu Leu Glu Val | Glu Leu Leu Leu Ala | Thr Ile Ser Glu Gln Glu |
| 785             | 790                 | 795                     |
| Leu His Pro Val | Ser Ala Arg Ala Arg | Val Phe Ile Glu Leu Pro |
| 800             | 805                 | 810                     |
| Leu Ser Ile Ala | Gly Met Ala Ile Pro | Gln Gln Leu Phe Phe Ser |
| 815             | 820                 | 825                     |
| Gly Val Val Arg | Gly Glu Arg Ala Met | Gln Ser Glu Arg Asp Val |
| 830             | 835                 | 840                     |
| Gly Ser Lys Val | Lys Tyr Glu Val Thr | Val Ser Asn Gln Gly Gln |
| 845             | 850                 | 855                     |
| Ser Leu Arg Thr | Leu Gly Ser Ala Phe | Leu Asn Ile Met Trp Pro |
| 860             | 865                 | 870                     |
| His Glu Ile Ala | Asn Gly Lys Trp Leu | Leu Tyr Pro Met Gln Val |
| 875             | 880                 | 885                     |
| Glu Leu Glu Gly | Gly Gln Gly Pro Gly | Gln Lys Gly Leu Cys Ser |
| 890             | 895                 | 900                     |
| Pro Arg Pro Asn | Ile Leu His Leu Asp | Val Asp Ser Arg Asp Arg |
| 905             | 910                 | 915                     |
| Arg Arg Arg Glu | Leu Glu Pro Pro Glu | Gln Gln Glu Pro Gly Glu |
| 920             | 925                 | 930                     |
| Arg Gln Glu Pro | Ser Met Ser Trp Trp | Pro Val Ser Ser Ala Glu |
| 935             | 940                 | 945                     |
| Lys Lys Lys Asn | Ile Thr Leu Asp Cys | Ala Arg Gly Thr Ala Asn |
| 950             | 955                 | 960                     |

|                 |   |      |      |      |
|-----------------|---|------|------|------|
| Cys Val Val Phe | Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala | 965  | 970  | 975  |
| Val Leu His Val | Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu | 980  | 985  | 990  |
| Glu Tyr Ser Ala | Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn | 995  | 1000 | 1005 |
| Ile Thr Val Lys | Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala | 1010 | 1015 | 1020 |
| Ser Thr Val Ile | Pro Val Met Val Tyr Leu Asp Pro Met Ala Val | 1025 | 1030 | 1035 |
| Val Ala Glu Gly | Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu | 1040 | 1045 | 1050 |
| Ala Gly Leu Leu | Val Leu Ala Leu Leu Val Leu Leu Leu Trp Lys | 1055 | 1060 | 1065 |
| Met Gly Phe Phe | Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro | 1070 | 1075 | 1080 |
| Gln Tyr His Ala | Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe | 1085 | 1090 | 1095 |
| Lys Glu Glu Lys | Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser | 1100 | 1105 | 1110 |
| Pro Arg Arg Glu | Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp | 1115 | 1120 | 1125 |
| Gly His Pro Glu | Leu Gly Pro Asp Gly His Pro Gly Pro Gly Thr | 1130 | 1135 | 1140 |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 438

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<210> 439

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 439  
gctgctgggg actgcaatgt agct 24

<210> 440  
<211> 46  
<212> DNA  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 440  
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<210> 441  
<211> 1964  
<212> DNA  
<213> Homo sapiens

<400> 441  
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ggagctgcga gcacagtgt ggctcacaac aagatgtca aggtgtcagc 150  
cgtactgtgt gtgtgtgcag ccgcttggtg cagtcagtct ctgcgagctg 200  
ccgcggcggg ggctgcagcc ggggggcggg cggacggcgg taattttctg 250  
gatgataaac aatggctcac cacaatctct cagtatgaca aggaagtcgg 300  
acagtggaac aaattccgag acgaagtaga ggatgattat ttccgcactt 350  
ggagtccagg aaaacccttc gatcaggctt tagatccagc taaggatcca 400  
tgcttaaaga tgaaatgtag tcgccataaa gtatgcattg ctcaagattc 450  
tcagactgca gtctgcatta gtcaccggag gcttacacac aggatgaaag 500  
aagcaggagt agaccatagg cagtggaggg gtcccatatt atccacctgc 550  
aagcagtgcc cagtggctta tccagccct gtttgtggtt cagatggtca 600  
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aacagatctc agtcaaatgt gaaggacatt gcccatgtcc ttcagataag 700  
cccaccagta caagcagaaa tgttaagaga gcatgcagtg acctggagtt 750  
caggaagtgc gcaaacagat tgcgggactg gttcaaggcc cttcatgaaa 800  
gtggaagtca aaacaagaag acaaaaacat tgctgaggcc tgagagaagc 850  
agattcgata ccagcatctt gccaatgtgc aaggactcac ttggctggat 900  
gtttaacaga cttgatacaa actatgacct gctattggac cagtcagagc 950

tcagaagcat ttaccttgat aagaatgaac agtgtaccaa ggcattcttc 1000  
aattcttgatg acacatacaa ggacagttta atatctaata atgagtgggtg 1050  
ctactgcttc cagagacagc aagaccacc ttgccagact gagctcagca 1100  
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gaataaatgg tgttgcatg tgtgctatag attttgagat ctccggagat 1300  
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gggatgatga tgatgggtgg gatgaccatg atgtatacat ttgattgatg 1450  
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cctattttaa attatcttct tcccaataa caaatgatt ctaaacctca 1550  
catatatttt gtataattat ttgaaaaatt gcagctaaag ttatagaact 1600  
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ctactataat aaatttttca cgagaacaaa ctttgtaa atcccataag 1750  
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aattctaagt gaaattttaa ataaataaat ttttaatgac ctgggtctta 1850  
aggatttagg aaaaatatgc atgctttaat tgcatttcca aagtagcatc 1900  
ttgctagacc tagatgagtc aggataacag agagatacca catgactcca 1950  
aaaaaaaaaaaa 1964

<210> 442  
<211> 436  
<212> PRT  
<213> Homo sapiens

<400> 442  
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1 5 10 15  
Cys Ser Gln Ser Leu Ala Ala Ala Ala Val Ala Ala Ala Gly  
20 25 30  
Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu  
35 40 45  
Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys

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| 50  |     |     |     |     |     |     |     |     |  | 55  |     |     |     |     | 60  |  |  |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|--|--|--|-----|
| Phe | Arg | Asp | Glu | Val | Glu | Asp | Asp | Tyr |  | Phe | Arg | Thr | Trp | Ser | Pro |  |  |  |     |
|     |     |     |     | 65  |     |     |     |     |  |     |     |     |     | 70  |     |  |  |  | 75  |
| Gly | Lys | Pro | Phe | Asp | Gln | Ala | Leu | Asp |  | Pro | Ala | Lys | Asp | Pro | Cys |  |  |  |     |
|     |     |     |     | 80  |     |     |     |     |  |     |     |     |     | 85  |     |  |  |  | 90  |
| Leu | Lys | Met | Lys | Cys | Ser | Arg | His | Lys |  | Val | Cys | Ile | Ala | Gln | Asp |  |  |  |     |
|     |     |     |     | 95  |     |     |     |     |  |     |     |     |     | 100 |     |  |  |  | 105 |
| Ser | Gln | Thr | Ala | Val | Cys | Ile | Ser | His |  | Arg | Arg | Leu | Thr | His | Arg |  |  |  |     |
|     |     |     |     | 110 |     |     |     |     |  |     |     |     |     | 115 |     |  |  |  | 120 |
| Met | Lys | Glu | Ala | Gly | Val | Asp | His | Arg |  | Gln | Trp | Arg | Gly | Pro | Ile |  |  |  |     |
|     |     |     |     | 125 |     |     |     |     |  |     |     |     |     | 130 |     |  |  |  | 135 |
| Leu | Ser | Thr | Cys | Lys | Gln | Cys | Pro | Val |  | Val | Tyr | Pro | Ser | Pro | Val |  |  |  |     |
|     |     |     |     | 140 |     |     |     |     |  |     |     |     |     | 145 |     |  |  |  | 150 |
| Cys | Gly | Ser | Asp | Gly | His | Thr | Tyr | Ser |  | Phe | Gln | Cys | Lys | Leu | Glu |  |  |  |     |
|     |     |     |     | 155 |     |     |     |     |  |     |     |     |     | 160 |     |  |  |  | 165 |
| Tyr | Gln | Ala | Cys | Val | Leu | Gly | Lys | Gln |  | Ile | Ser | Val | Lys | Cys | Glu |  |  |  |     |
|     |     |     |     | 170 |     |     |     |     |  |     |     |     |     | 175 |     |  |  |  | 180 |
| Gly | His | Cys | Pro | Cys | Pro | Ser | Asp | Lys |  | Pro | Thr | Ser | Thr | Ser | Arg |  |  |  |     |
|     |     |     |     | 185 |     |     |     |     |  |     |     |     |     | 190 |     |  |  |  | 195 |
| Asn | Val | Lys | Arg | Ala | Cys | Ser | Asp | Leu |  | Glu | Phe | Arg | Glu | Val | Ala |  |  |  |     |
|     |     |     |     | 200 |     |     |     |     |  |     |     |     |     | 205 |     |  |  |  | 210 |
| Asn | Arg | Leu | Arg | Asp | Trp | Phe | Lys | Ala |  | Leu | His | Glu | Ser | Gly | Ser |  |  |  |     |
|     |     |     |     | 215 |     |     |     |     |  |     |     |     |     | 220 |     |  |  |  | 225 |
| Gln | Asn | Lys | Lys | Thr | Lys | Thr | Leu | Leu |  | Arg | Pro | Glu | Arg | Ser | Arg |  |  |  |     |
|     |     |     |     | 230 |     |     |     |     |  |     |     |     |     | 235 |     |  |  |  | 240 |
| Phe | Asp | Thr | Ser | Ile | Leu | Pro | Ile | Cys |  | Lys | Asp | Ser | Leu | Gly | Trp |  |  |  |     |
|     |     |     |     | 245 |     |     |     |     |  |     |     |     |     | 250 |     |  |  |  | 255 |
| Met | Phe | Asn | Arg | Leu | Asp | Thr | Asn | Tyr |  | Asp | Leu | Leu | Leu | Asp | Gln |  |  |  |     |
|     |     |     |     | 260 |     |     |     |     |  |     |     |     |     | 265 |     |  |  |  | 270 |
| Ser | Glu | Leu | Arg | Ser | Ile | Tyr | Leu | Asp |  | Lys | Asn | Glu | Gln | Cys | Thr |  |  |  |     |
|     |     |     |     | 275 |     |     |     |     |  |     |     |     |     | 280 |     |  |  |  | 285 |
| Lys | Ala | Phe | Phe | Asn | Ser | Cys | Asp | Thr |  | Tyr | Lys | Asp | Ser | Leu | Ile |  |  |  |     |
|     |     |     |     | 290 |     |     |     |     |  |     |     |     |     | 295 |     |  |  |  | 300 |
| Ser | Asn | Asn | Glu | Trp | Cys | Tyr | Cys | Phe |  | Gln | Arg | Gln | Gln | Asp | Pro |  |  |  |     |
|     |     |     |     | 305 |     |     |     |     |  |     |     |     |     | 310 |     |  |  |  | 315 |
| Pro | Cys | Gln | Thr | Glu | Leu | Ser | Asn | Ile |  | Gln | Lys | Arg | Gln | Gly | Val |  |  |  |     |
|     |     |     |     | 320 |     |     |     |     |  |     |     |     |     | 325 |     |  |  |  | 330 |
| Lys | Lys | Leu | Leu | Gly | Gln | Tyr | Ile | Pro |  | Leu | Cys | Asp | Glu | Asp | Gly |  |  |  |     |
|     |     |     |     | 335 |     |     |     |     |  |     |     |     |     | 340 |     |  |  |  | 345 |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Lys | Pro | Thr | Gln | Cys | His | Gly | Ser | Val | Gly | Gln | Cys | Trp |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |
| Cys | Val | Asp | Arg | Tyr | Gly | Asn | Glu | Val | Met | Gly | Ser | Arg | Ile | Asn |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |
| Gly | Val | Ala | Asp | Cys | Ala | Ile | Asp | Phe | Glu | Ile | Ser | Gly | Asp | Phe |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |
| Ala | Ser | Gly | Asp | Phe | His | Glu | Trp | Thr | Asp | Asp | Glu | Asp | Asp | Glu |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |
| Asp | Asp | Ile | Met | Asn | Asp | Glu | Asp | Glu | Ile | Glu | Asp | Asp | Asp | Glu |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |
| Asp | Glu | Gly | Asp | Asp | Asp | Gly | Gly | Asp | Asp | His | Asp | Val | Tyr |     |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |

Ile

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 <223> Synthetic oligonucleotide probe

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<210> 444  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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<400> 444  
 catcatggtc atcaccacca tcatcatc 28

<210> 445  
 <211> 48  
 <212> DNA  
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<220>  
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<400> 445  
 gggtactaca agccaacaca atgtcatggc agtggtggac agtgctgg 48

<210> 446  
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 <212> DNA  
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<400> 446

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cagggatggg cgacaagatc tggctgccct tccccgtgct ctttctggcc 150  
gctctgcctc cggtgctgct gcctggggcg gccggcttca caccttccct 200  
cgatagcgac ttcaccttta cccttcccgc cggccagaag gaggcttct 250  
accagcccat gcccctgaag gcctcgctgg agatcgagta ccaagtttta 300  
gatggagcag gattagatat tgatttccat cttgcctctc cagaaggcaa 350  
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tctgagaagg tgattttctt tgaattaatc ctggataata tgggagaaca 500  
ggcacaagaa caagaagatt ggaagaaata tattactggc acagatatat 550  
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ctatggttaa tttagtggc atggtggtgg tgtcagccat tcaagtttat 750  
atgctgaaga gtctgtttga agataagagg aaaagtagaa cttaaaactc 800  
caaactagag tacgtaacat tgaaaaatga ggcataaaaa tgcaataaac 850  
tggttacagtc aagaccatta atggtcttct ccaaaatatt ttgagatata 900  
aaagtaggaa acaggtataa ttttaatgtg aaaattaagt cttcactttc 950  
tgtgcaagta atcctgctga tccagttgta cttaagtgtg taacaggaat 1000  
attttgcaga atataggttt aactgaatga agccatatta ataactgcat 1050  
tttctaact ttgaaaaatt ttgcaaatgt cttaggtgat ttaataaat 1100  
gagtattggg cctaattgca acaccagtct gtttttaaca ggttctatta 1150  
cccagaactt ttttgtaa atgcgcagtta caaattaact gtggaagttt 1200  
tcagttttta gttataaatc acctgagaat tacctaataa tggattgaat 1250  
aaatcttttag actacaaaag cccaactttt ctctatttac atatgcatct 1300  
ctcctataat gtaaatagaa taatagcttt gaaatacaat taggtttttg 1350  
agatttttat aaccaaat acattcagtgt aacatattag cagaaagcat 1400  
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ttaaaaacac aaagttacac ttactaaaat taggacatgt tttctctttg 1500  
 aaatgaagaa tatagtttaa aagcttcctc ctccataggg acacattttc 1550  
 tctaaccctt aactaaagt taggatttta aaattaaatg tgaggtaaaa 1600  
 taagtttatt tttaatagta tctgtcaagt taatatctgt caacagttaa 1650  
 taatcatggt atgttaattt taacatgatt gctgacttgg ataattcatt 1700  
 attaccagca gttatgaagg aaatattgct aaaatgatct gggcctacca 1750  
 taaataaata tctccttttc tgagctctaa gaattatcag aaaacaggaa 1800  
 agaatttaga aaaacttgag aaaacctaata ccaaaataaa attcacttaa 1850  
 gtagaactat aaataaatat ctagaatctg actggctcat catgacatcc 1900  
 tactcataac ataaatcaaa ggagatgatt aatttccagt tagctggaag 1950  
 aaactttggc tgtaggtttt tattttctac aagaattctg gtttgaatta 2000  
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 taaaatggcc tttctgaaca ctttatttat tgatgttgaa gtaaggatta 2150  
 gaaacataga ctccaagtt ttaaaccact aaatgtgaat aacctatata 2200  
 tacaacaaag tttctgccat ctagcttttt gaagtctatg ggggtcttac 2250  
 tcaagtacta gtaatttaac ttcacatga atgaactata atttttaagt 2300  
 tatgccatt tataacgttg tttatgacta cattgtgagt tagaaacaaa 2350  
 cttaaaattt ggggtataga acccctcaac aggttagtaa tgctggaatt 2400  
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 tagtataaaa agagatacat ttccctotta ggcccctggg agaagagcag 2500  
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 gtaccataac taataaagca gggtagagat ataaactact gcatcttttc 2750  
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 taaggacaat tatttttata gacaaagtaa aaagacagat atttaagagg 3000  
 cataacaaaa aaagcaaaac ttgtaaacag agtaaaaatc tttaatatctt 3050  
 ctaaagacat actgtttatc tgcttcatat gcttttttta atttcactat 3100  
 tccattttcta aattaaagtt atgctaaatt gagtaagctg tttatcactt 3150  
 aacagctcat tttgtctttt tcaatataca aatttttaaaa atactacaat 3200  
 atttaactaa ggcccaaccg atttccataa tgtagcagtt accgtgttca 3250  
 cctcacacta aggctagag tttgctctga tatgcatttg gatgattaat 3300  
 gttatgctgt tctttcatgt gaatgtcaag acatggaggg tgtttgtaat 3350  
 tttatggtaa aattaatcct tcttacacat aatgggtgtct taaaattgac 3400  
 aaaaaatgag cacttacaat tgtatgtctc ctcaaatgaa gattctttat 3450  
 gtgaaatttt aaaagacatt gattccgcat gtaaggattt ttcactctgaa 3500  
 gtacaataat gcacaatcag tgttgctcaa actgctttat acttataaac 3550  
 agccatctta aataagcaac gtattgtgag tactgatatg tatataataa 3600  
 aaattatcaa aggaaaa 3617

<210> 447  
 <211> 229  
 <212> PRT  
 <213> Homo sapiens

<400> 447  
 Met Gly Asp Lys Ile Trp Leu Pro Phe Pro Val Leu Leu Leu Ala  
 1 5 10 15  
 Ala Leu Pro Pro Val Leu Leu Pro Gly Ala Ala Gly Phe Thr Pro  
 20 25 30  
 Ser Leu Asp Ser Asp Phe Thr Phe Thr Leu Pro Ala Gly Gln Lys  
 35 40 45  
 Glu Cys Phe Tyr Gln Pro Met Pro Leu Lys Ala Ser Leu Glu Ile  
 50 55 60  
 Glu Tyr Gln Val Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His  
 65 70 75  
 Leu Ala Ser Pro Glu Gly Lys Thr Leu Val Phe Glu Gln Arg Lys  
 80 85 90  
 Ser Asp Gly Val His Thr Val Glu Thr Glu Val Gly Asp Tyr Met  
 95 100 105  
 Phe Cys Phe Asp Asn Thr Phe Ser Thr Ile Ser Glu Lys Val Ile

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 110                                 | 115                     | 120 |
| Phe Phe Glu Leu Ile Leu Asp Asn Met | Gly Glu Gln Ala Gln Glu |     |
| 125                                 | 130                     | 135 |
| Gln Glu Asp Trp Lys Lys Tyr Ile Thr | Gly Thr Asp Ile Leu Asp |     |
| 140                                 | 145                     | 150 |
| Met Lys Leu Glu Asp Ile Leu Glu Ser | Ile Asn Ser Ile Lys Ser |     |
| 155                                 | 160                     | 165 |
| Arg Leu Ser Lys Ser Gly His Ile Gln | Ile Leu Leu Arg Ala Phe |     |
| 170                                 | 175                     | 180 |
| Glu Ala Arg Asp Arg Asn Ile Gln Glu | Ser Asn Phe Asp Arg Val |     |
| 185                                 | 190                     | 195 |
| Asn Phe Trp Ser Met Val Asn Leu Val | Val Met Val Val Val Ser |     |
| 200                                 | 205                     | 210 |
| Ala Ile Gln Val Tyr Met Leu Lys Ser | Leu Phe Glu Asp Lys Arg |     |
| 215                                 | 220                     | 225 |
| Lys Ser Arg Thr                     |                         |     |

<210> 448  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 448  
 cccagcaggg ctgggcgaca aga 23

<210> 449  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 449  
 gtcttccagt ttcatatcca ata 23

<210> 450  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 450  
 ccagaaggag cacggggaag ggcagccaga tcttgctgcc cat 43

<210> 451  
 <211> 859  
 <212> DNA  
 <213> Homo sapiens

<400> 451  
 ccacccctga gatcttttta taaaaaaccc agtctttgct gaccagacaa 50  
 agcataccag atctcaccag agagtcgcag acactatgct gcctcccatg 100  
 gccctgcccc gtgtgtcctg gatgctgctt tcctgcctca ttctcctgtg 150  
 tcaggttcaa ggtgaagaaa cccagaagga actgccctct ccacggatca 200  
 gctgtcccaa aggctccaag gcctatggct cccctgcta tgccttgttt 250  
 ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300  
 ctctggaaaa ctggtgtctg tgctcagtgg ggctgaggga tccttcgtgt 350  
 cctccctggg gaggagcatt agtaacagct actcatacat ctggattggg 400  
 ctccatgacc ccacacaggg ctctgagcct gatggagatg gatgggagtg 450  
 gagtagcact gatgtgatga attactttgc atgggagaaa aatccctcca 500  
 ccatcttaaa ccctggccac tgtgggagcc tgtcaagaag cacaggattt 550  
 ctgaagtgga aagattataa ctgtgatgca aagttaccct atgtctgcaa 600  
 gttcaaggac tagggcaggt gggaagtcag cagcctcagc ttggcgtgca 650  
 gctcatcatg gacatgagac cagtgtgaag actcaccctg gaagagaata 700  
 ttctcccaa actgccctac ctgactacct tgtcatgatc ctcttctttt 750  
 ttcttttttc ttcaccttca tttcaggctt ttctctgtct tccatgtctt 800  
 gagatctcag agaataataa taaaaatggt actttataaa aaaaaaaaaa 850  
 aaaaaaaaaa 859

<210> 452  
 <211> 175  
 <212> PRT  
 <213> Homo sapiens

<400> 452  
 Met Leu Pro Pro Met Ala Leu Pro Ser Val Ser Trp Met Leu Leu  
 1 5 10 15  
 Ser Cys Leu Ile Leu Leu Cys Gln Val Gln Gly Glu Glu Thr Gln  
 20 25 30  
 Lys Glu Leu Pro Ser Pro Arg Ile Ser Cys Pro Lys Gly Ser Lys  
 35 40 45  
 Ala Tyr Gly Ser Pro Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser

|                 |   |  |     |  |     |
|-----------------|---|--|-----|--|-----|
|                 | 50  |  | 55  |  | 60  |
| Trp Met Asp Ala | Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys |  |     |  |     |
|                 | 65  |  | 70  |  | 75  |
| Leu Val Ser Val | Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser |  |     |  |     |
|                 | 80  |  | 85  |  | 90  |
| Leu Val Arg Ser | Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly |  |     |  |     |
|                 | 95  |  | 100 |  | 105 |
| Leu His Asp Pro | Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp |  |     |  |     |
|                 | 110   |  | 115 |  | 120 |
| Glu Trp Ser Ser | Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys |  |     |  |     |
|                 | 125   |  | 130 |  | 135 |
| Asn Pro Ser Thr | Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser |  |     |  |     |
|                 | 140   |  | 145 |  | 150 |
| Arg Ser Thr Gly | Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala |  |     |  |     |
|                 | 155   |  | 160 |  | 165 |
| Lys Leu Pro Tyr | Val Cys Lys Phe Lys Asp                     |  |     |  |     |
|                 | 170   |  | 175 |  |     |

<210> 453  
 <211> 550  
 <212> DNA  
 <213> Homo sapiens

<400> 453  
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 tgggggtgaga gcacagagga gtgggcccgg accatgcggg ggacgcggct 100  
 ggcgtcctctg gcgctggtgc tggctgcctg cggagagctg gcgccggccc 150  
 tgcgtgcta cgtctgtccg gagccacag gagtgtcgga ctgtgtcacc 200  
 atcgccacct gcaccaccaa cgaaaccatg tgcaagacca cactctactc 250  
 ccgggagata gtgtaccct tccaggggga ctccacggtg accaagtcct 300  
 gtgccagcaa gtgtaagccc tcggatgtgg atggcatcgg ccagaccctg 350  
 cccgtgtcct gctgcaatac tgagctgtgc aatgtagacg gggcgcccgc 400  
 tctgaacagc ctccactgcg gggccctcac gctcctccca ctcttgagcc 450  
 tccgactgta gagtccccgc ccaccccat ggcctatgc ggcccagccc 500  
 cgaatgcctt gaagaagtgc cccctgcacc aggaaaaaaa aaaaaaaaaa 550

<210> 454  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 454

Met Arg Gly Thr Arg Leu Ala Leu Leu Ala Leu Val Leu Ala Ala  
1 5 10 15

Cys Gly Glu Leu Ala Pro Ala Leu Arg Cys Tyr Val Cys Pro Glu  
20 25 30

Pro Thr Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr  
35 40 45

Asn Glu Thr Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val  
50 55 60

Tyr Pro Phe Gln Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser  
65 70 75

Lys Cys Lys Pro Ser Asp Val Asp Gly Ile Gly Gln Thr Leu Pro  
80 85 90

Val Ser Cys Cys Asn Thr Glu Leu Cys Asn Val Asp Gly Ala Pro  
95 100 105

Ala Leu Asn Ser Leu His Cys Gly Ala Leu Thr Leu Leu Pro Leu  
110 115 120

Leu Ser Leu Arg Leu  
125

<210> 455

<211> 1518

<212> DNA

<213> Homo sapiens

<400> 455

ctgcagtcag gactctggga ccgcaggggg ctcccgacc ctgactctgc 50

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attttctctt tctttctccc tcttgagtcc ttctgagatg atggctctgg 150

gcgcagcggg agctacccgg gtctttgtcg cgatggtagc ggcggtcttc 200

ggcggccacc ctctgctggg agtgagcgcc acctgaact cggttctcaa 250

ttccaacgct atcaagaacc tgccccacc gctgggcggc gctgcggggc 300

accaggctc tgcagtcagc gccgcgccg gaatcctgta cccgggcggg 350

aataagtacc agaccattga caactaccag ccgtaccgt gcgcagagga 400

cgaggagtgc ggactgatg agtactgcgc tagtcccacc cgcggagggg 450

acgcaggcgt gcaaactctgt ctgcctgca ggaagcgccg aaaacgctgc 500

atgcgtcacg ctatgtgctg ccccggaat tactgcaaaa atggaatatg 550

tgtgtcttct gatcaaaatc atttccgagg agaaattgag gaaaccatca 600



ctgaaagctt tggtaatgat catagcacct tggatgggta ttocagaaga 650  
 accaccttgt cttcaaaaat gtatcacacc aaaggacaag aaggttctgt 700  
 ttgtctccgg tcatcagact gtgcctcagg attgtgttgt gctagacact 750  
 tctgggtccaa gatctgtaaa cctgtcctga aagaagggtca agtgtgtacc 800  
 aagcatagga gaaaagggtc tcatggacta gaaatattcc agcgttggtta 850  
 ctgtggagaa ggtctgtctt gccggatata gaaagatcac catcaagcca 900  
 gtaattcttc taggcttcac acttgtcaga gacactaaac cagctatcca 950  
 aatgcagtga actcctttta tataatagat gctatgaaaa ccttttatga 1000  
 ccttcatcaa ctcaatccta aggatataca agttctgtgg tttcagttaa 1050  
 gcattccaat aacaccttcc aaaaacctgg agtgtaagag ctttgtttct 1100  
 ttatggaact cccctgtgat tgcagtaaata tactgtattg taaattctca 1150  
 gtgtggcact tacctgtaaa tgcaatgaaa cttttaatta tttttctaaa 1200  
 ggtgctgcac tgcctatttt tcctcttggt atgtaaattt ttgtacacat 1250  
 tgattgttat cttgactgac aaatattcta tattgaactg aagtaaatca 1300  
 tttcagctta tagttcttaa aagcataacc ctttacccca ttttaattcta 1350  
 gagtctagaa cgcaaggatc tcttggaaatg acaaatgata ggtacctaaa 1400  
 atgtaacatg aaaatactag cttattttct gaaatgtact atcttaatgc 1450  
 ttaaattata tttcccttta ggctgtgata gtttttgaaa taaaatttaa 1500  
 catttaaaaa aaaaaaaaa 1518

<210> 456  
 <211> 266  
 <212> PRT  
 <213> Homo sapiens

<400> 456  
 Met Met Ala Leu Gly Ala Ala Gly Ala Thr Arg Val Phe Val Ala  
 1 5 10 15  
 Met Val Ala Ala Ala Leu Gly Gly His Pro Leu Leu Gly Val Ser  
 20 25 30  
 Ala Thr Leu Asn Ser Val Leu Asn Ser Asn Ala Ile Lys Asn Leu  
 35 40 45  
 Pro Pro Pro Leu Gly Gly Ala Ala Gly His Pro Gly Ser Ala Val  
 50 55 60  
 Ser Ala Ala Pro Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln  
 65 70 75

09973299.101501

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Ile | Asp | Asn | Tyr | Gln | Pro | Tyr | Pro | Cys | Ala | Glu | Asp | Glu | Glu |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Cys | Gly | Thr | Asp | Glu | Tyr | Cys | Ala | Ser | Pro | Thr | Arg | Gly | Gly | Asp |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Ala | Gly | Val | Gln | Ile | Cys | Leu | Ala | Cys | Arg | Lys | Arg | Arg | Lys | Arg |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Cys | Met | Arg | His | Ala | Met | Cys | Cys | Pro | Gly | Asn | Tyr | Cys | Lys | Asn |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gly | Ile | Cys | Val | Ser | Ser | Asp | Gln | Asn | His | Phe | Arg | Gly | Glu | Ile |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Glu | Glu | Thr | Ile | Thr | Glu | Ser | Phe | Gly | Asn | Asp | His | Ser | Thr | Leu |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Asp | Gly | Tyr | Ser | Arg | Arg | Thr | Thr | Leu | Ser | Ser | Lys | Met | Tyr | His |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Thr | Lys | Gly | Gln | Glu | Gly | Ser | Val | Cys | Leu | Arg | Ser | Ser | Asp | Cys |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ala | Ser | Gly | Leu | Cys | Cys | Ala | Arg | His | Phe | Trp | Ser | Lys | Ile | Cys |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Lys | Pro | Val | Leu | Lys | Glu | Gly | Gln | Val | Cys | Thr | Lys | His | Arg | Arg |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Lys | Gly | Ser | His | Gly | Leu | Glu | Ile | Phe | Gln | Arg | Cys | Tyr | Cys | Gly |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Glu | Gly | Leu | Ser | Cys | Arg | Ile | Gln | Lys | Asp | His | His | Gln | Ala | Ser |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Asn | Ser | Ser | Arg | Leu | His | Thr | Cys | Gln | Arg | His |     |     |     |     |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     |  |

<210> 457  
 <211> 638  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 30, 123, 133, 139, 180, 214, 259, 282, 308, 452, 467, 471, 473, 509, 556  
 <223> unknown base

<400> 457  
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 ttttgcagcg gaacgggaag gttttgtggg acccaggttg aaatgacggt 100  
 catttttttt tctttctcct tcnngagatcc ttntgagang atggtttttg 150  
 gcgcagcggg agctaaccgc gttttttgtn gcgatggtag cggcggtttt 200

cggcgggccac cttntgctgg gagtgagcgc caccttgaat cggttttcaa 250  
 ttccaacgnt atcaagaacc tgccccacc gntgggcggc gctgcggggc 300  
 acccaggntt tgcagtcagc gccgcgccgg gaatcctgta cccgggagg 350  
 aataagtacc agaccattga caattaccag ccgtaccgt ggcagagga 400  
 cgaggagtgc ggcactgatg agtactgcgc tagtcccacc cgcggagggg 450  
 angcgggcgt gcaaantgt ntngcctgca ggaagcgccg aaaacgctgc 500  
 atgcgtcang ctatgtgctg ccccggaat tactgcaaaa atggaatatg 550  
 tgtgtnttct gatcaaaatc atttccgagg agaaattgag gaaaccatca 600  
 ctgaaagctt tggtaatgat catagcacct tggatggg 638

<210> 458  
 <211> 4040  
 <212> DNA  
 <213> Homo sapiens

<400> 458  
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 ttctctcctg cacgcggtgc ttgggctcgg ccaggcgggg tccgccgcca 150  
 gggtttgagg atgggggagt agctacagga agcgaccccg cgatggcaag 200  
 gtatatTTTT gtggaatgaa aaggaagtat tagaaatgag ctgaagacca 250  
 ttcacagatt aatatttttg gggacagatt tgtgatgctt gattcaccct 300  
 tgaagtaatg tagacagaag ttctcaaatt tgcatattac atcaactgga 350  
 accagcagtg aatcttaatg ttcacttaaa tcagaacttg cataagaaag 400  
 agaatgggag tctgggttaa taaagatgac tatatcagag acttgaaaag 450  
 gatcattctc tgTTTTctga tagtgtatat ggccatttta gtgggcacag 500  
 atcaggatTT ttacagttta cttggagtgt ccaaaactgc aagcagtaga 550  
 gaaataagac aagctttcaa gaaattggca ttgaagttac atcctgataa 600  
 aaacccgaat aacccaaatg cacatggcga ttttttaaaa ataaatagag 650  
 catatgaagt actcaaagat gaagatctac ggaaaaagta tgacaaatat 700  
 ggagaaaagg gacttgagga taatcaaggT ggccagtatg aaagctggaa 750  
 ctattatcgt tatgattttg gtatttatga tgatgacct gaaatcataa 800  
 cattggaaag aagagaattt gatgctgctg ttaattctgg agaactgtgg 850

tttgtaaatt tttactcccc aggctgttca cactgccatg atttagctcc 900  
 cacatggaga gactttgcta aagaagtgga tgggttactt cgaattggag 950  
 ctgttaactg tggatgatgat agaatgcttt gccgaatgaa aggagtcaac 1000  
 agctatccca gtctcttcat ttttcggtct ggaatggccc cagtgaata 1050  
 tcatggagac agatcaaagg agagtttagt gagttttgca atgcagcatg 1100  
 ttagaagtac agtgacagaa ctttggacag gaaattttgt caactccata 1150  
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 aggaggagat tgtttgactt cacagacacg actcaggctt agtggcatgt 1250  
 tgtttctcaa ctcatggat gctaaagaaa tatatttga agtaatacat 1300  
 aatcttccag attttgaact acttccgca aacacactag aggatcgttt 1350  
 ggctcatcat cgggtggctgt tattttttca ttttgaaaa aatgaaaatt 1400  
 caaatgatcc tgagctgaaa aaactaaaaa ctctacttaa aaatgatcat 1450  
 attcaagttg gcaggtttga ctgttcctct gcaccagaca tctgtagtaa 1500  
 tctgtatgtt tttcagccgt ctctagcagt atttaaagga caaggaacca 1550  
 aagaatatga aattcatcat ggaaagaaga ttctatatga tatacttgcc 1600  
 tttgcaaag aaagtgtgaa ttctcatgtt accacgcttg gacctcaaaa 1650  
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 ggtgtccacc atgtcgagct ttactaccag agttacgaag agcatcaa 1750  
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 gggactctgt aacatgtata acattcaggc ttatccaaca acagtggat 1850  
 tcaaccagtc caacattcat gagtatgaag gacatcactc tgctgaacaa 1900  
 atcttggagt tcatagagga tcttatgaat ccttcagtgg tctcccttac 1950  
 acccaccacc ttcaacgaac tagttacaca aagaaaacac aacgaagtct 2000  
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 aaagataccc tgagataaga ttttttcccc caaatcaaa taaagcttat 2200  
 cagtatcaca gttacaatgg ttggaatagg gatgcttatt ccctgagaat 2250  
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ctttcagtga aaaagttcta caagggaaaa atcattgggt gattgatttc 2350  
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<210> 459  
 <211> 747  
 <212> PRT  
 <213> Homo sapiens

<400> 459

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Val | Trp | Leu | Asn | Lys | Asp | Asp | Tyr | Ile | Arg | Asp | Leu | Lys | 1   | 5   | 10  | 15 |
| Arg | Ile | Ile | Leu | Cys | Phe | Leu | Ile | Val | Tyr | Met | Ala | Ile | Leu | Val | 20  | 25  | 30  |    |
| Gly | Thr | Asp | Gln | Asp | Phe | Tyr | Ser | Leu | Leu | Gly | Val | Ser | Lys | Thr | 35  | 40  | 45  |    |
| Ala | Ser | Ser | Arg | Glu | Ile | Arg | Gln | Ala | Phe | Lys | Lys | Leu | Ala | Leu | 50  | 55  | 60  |    |
| Lys | Leu | His | Pro | Asp | Lys | Asn | Pro | Asn | Asn | Pro | Asn | Ala | His | Gly | 65  | 70  | 75  |    |
| Asp | Phe | Leu | Lys | Ile | Asn | Arg | Ala | Tyr | Glu | Val | Leu | Lys | Asp | Glu | 80  | 85  | 90  |    |
| Asp | Leu | Arg | Lys | Lys | Tyr | Asp | Lys | Tyr | Gly | Glu | Lys | Gly | Leu | Glu | 95  | 100 | 105 |    |
| Asp | Asn | Gln | Gly | Gly | Gln | Tyr | Glu | Ser | Trp | Asn | Tyr | Tyr | Arg | Tyr | 110 | 115 | 120 |    |
| Asp | Phe | Gly | Ile | Tyr | Asp | Asp | Asp | Pro | Glu | Ile | Ile | Thr | Leu | Glu | 125 | 130 | 135 |    |
| Arg | Arg | Glu | Phe | Asp | Ala | Ala | Val | Asn | Ser | Gly | Glu | Leu | Trp | Phe | 140 | 145 | 150 |    |
| Val | Asn | Phe | Tyr | Ser | Pro | Gly | Cys | Ser | His | Cys | His | Asp | Leu | Ala | 155 | 160 | 165 |    |
| Pro | Thr | Trp | Arg | Asp | Phe | Ala | Lys | Glu | Val | Asp | Gly | Leu | Leu | Arg | 170 | 175 | 180 |    |
| Ile | Gly | Ala | Val | Asn | Cys | Gly | Asp | Asp | Arg | Met | Leu | Cys | Arg | Met | 185 | 190 | 195 |    |
| Lys | Gly | Val | Asn | Ser | Tyr | Pro | Ser | Leu | Phe | Ile | Phe | Arg | Ser | Gly |     |     |     |    |

105101" 66282660

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 200                                 | 205                     | 210 |
| Met Ala Pro Val Lys Tyr His Gly Asp | Arg Ser Lys Glu Ser Leu |     |
| 215                                 | 220                     | 225 |
| Val Ser Phe Ala Met Gln His Val Arg | Ser Thr Val Thr Glu Leu |     |
| 230                                 | 235                     | 240 |
| Trp Thr Gly Asn Phe Val Asn Ser Ile | Gln Thr Ala Phe Ala Ala |     |
| 245                                 | 250                     | 255 |
| Gly Ile Gly Trp Leu Ile Thr Phe Cys | Ser Lys Gly Gly Asp Cys |     |
| 260                                 | 265                     | 270 |
| Leu Thr Ser Gln Thr Arg Leu Arg Leu | Ser Gly Met Leu Phe Leu |     |
| 275                                 | 280                     | 285 |
| Asn Ser Leu Asp Ala Lys Glu Ile Tyr | Leu Glu Val Ile His Asn |     |
| 290                                 | 295                     | 300 |
| Leu Pro Asp Phe Glu Leu Leu Ser Ala | Asn Thr Leu Glu Asp Arg |     |
| 305                                 | 310                     | 315 |
| Leu Ala His His Arg Trp Leu Leu Phe | Phe His Phe Gly Lys Asn |     |
| 320                                 | 325                     | 330 |
| Glu Asn Ser Asn Asp Pro Glu Leu Lys | Lys Leu Lys Thr Leu Leu |     |
| 335                                 | 340                     | 345 |
| Lys Asn Asp His Ile Gln Val Gly Arg | Phe Asp Cys Ser Ser Ala |     |
| 350                                 | 355                     | 360 |
| Pro Asp Ile Cys Ser Asn Leu Tyr Val | Phe Gln Pro Ser Leu Ala |     |
| 365                                 | 370                     | 375 |
| Val Phe Lys Gly Gln Gly Thr Lys Glu | Tyr Glu Ile His His Gly |     |
| 380                                 | 385                     | 390 |
| Lys Lys Ile Leu Tyr Asp Ile Leu Ala | Phe Ala Lys Glu Ser Val |     |
| 395                                 | 400                     | 405 |
| Asn Ser His Val Thr Thr Leu Gly Pro | Gln Asn Phe Pro Ala Asn |     |
| 410                                 | 415                     | 420 |
| Asp Lys Glu Pro Trp Leu Val Asp Phe | Phe Ala Pro Trp Cys Pro |     |
| 425                                 | 430                     | 435 |
| Pro Cys Arg Ala Leu Leu Pro Glu Leu | Arg Arg Ala Ser Asn Leu |     |
| 440                                 | 445                     | 450 |
| Leu Tyr Gly Gln Leu Lys Phe Gly Thr | Leu Asp Cys Thr Val His |     |
| 455                                 | 460                     | 465 |
| Glu Gly Leu Cys Asn Met Tyr Asn Ile | Gln Ala Tyr Pro Thr Thr |     |
| 470                                 | 475                     | 480 |
| Val Val Phe Asn Gln Ser Asn Ile His | Glu Tyr Glu Gly His His |     |
| 485                                 | 490                     | 495 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Glu | Gln | Ile | Leu | Glu | Phe | Ile | Glu | Asp | Leu | Met | Asn | Pro |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |
| Ser | Val | Val | Ser | Leu | Thr | Pro | Thr | Thr | Phe | Asn | Glu | Leu | Val | Thr |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |
| Gln | Arg | Lys | His | Asn | Glu | Val | Trp | Met | Val | Asp | Phe | Tyr | Ser | Pro |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |
| Trp | Cys | His | Pro | Cys | Gln | Val | Leu | Met | Pro | Glu | Trp | Lys | Arg | Met |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |
| Ala | Arg | Thr | Leu | Thr | Gly | Leu | Ile | Asn | Val | Gly | Ser | Ile | Asp | Cys |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |
| Gln | Gln | Tyr | His | Ser | Phe | Cys | Ala | Gln | Glu | Asn | Val | Gln | Arg | Tyr |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |
| Pro | Glu | Ile | Arg | Phe | Phe | Pro | Pro | Lys | Ser | Asn | Lys | Ala | Tyr | Gln |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Tyr | His | Ser | Tyr | Asn | Gly | Trp | Asn | Arg | Asp | Ala | Tyr | Ser | Leu | Arg |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |
| Ile | Trp | Gly | Leu | Gly | Phe | Leu | Pro | Gln | Val | Ser | Thr | Asp | Leu | Thr |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |
| Pro | Gln | Thr | Phe | Ser | Glu | Lys | Val | Leu | Gln | Gly | Lys | Asn | His | Trp |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu |     |     |     |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     |     |

<210> 460

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe



<400> 460  
actccccagg ctgttcacac tgcc 24

<210> 461  
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<220>  
<223> Synthetic oligonucleotide probe

<400> 461  
gatcagccag ccaataccag cagc 24

<210> 462  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

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<210> 463  
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<212> DNA  
<213> Homo sapiens

<400> 463  
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caccatcatc tactcctact tggagtcggt ggtgaagttt ttcattcctc 150  
agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200  
catggaatag gcaggcagac tacttatgaa ttgcaaaac gacagagcat 250  
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 gaattttaag ttctagcccc atgataacct ttttctttgt aatttatgct 1700  
 ttcatatata cttggtccca gagatgttta gacaatttta ggctcaaaaa 1750  
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 atggacccaa gagaagaa 1818

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 <211> 300  
 <212> PRT  
 <213> Homo sapiens

<400> 464  
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 Tyr Ser Tyr Leu Glu Ser Leu Val Lys Phe Phe Ile Pro Gln Arg  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| His | Ile | Val | Thr | Val | Ala | Ser | Val | Cys | Gly | His | Glu | Gly | Ile | Pro |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Tyr | Leu | Ile | Pro | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| His | Arg | Gly | Leu | Thr | Ser | Glu | Leu | Gln | Ala | Leu | Gly | Lys | Thr | Gly |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Ile | Lys | Thr | Ser | Cys | Leu | Cys | Pro | Val | Phe | Val | Asn | Thr | Gly | Phe |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Thr | Lys | Asn | Pro | Ser | Thr | Arg | Leu | Trp | Pro | Val | Leu | Glu | Thr | Asp |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Glu | Val | Val | Arg | Ser | Leu | Ile | Asp | Gly | Ile | Leu | Thr | Asn | Lys | Lys |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Met | Ile | Phe | Val | Pro | Ser | Tyr | Ile | Asn | Ile | Phe | Leu | Arg | Leu | Gln |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Lys | Phe | Leu | Pro | Glu | Arg | Ala | Ser | Ala | Ile | Leu | Asn | Arg | Met | Gln |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Asn | Ile | Gln | Phe | Glu | Ala | Val | Val | Gly | His | Lys | Ile | Lys | Met | Lys |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |

<210> 465  
 <211> 1547  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 465

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 gagagggccc agcccgcccc gggcaggatg accaaggccc ggctgttccg 150  
 gctgtggctg gtgctggggt cgggtgttcat gatcctgctg atcatcgtgt 200  
 actgggacag cgcaggcgcc gcgcacttct acttgcacac gtccttctct 250  
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 gtgctggcgt gaagcagagc gaccttccca gaaaggagac ggagcagccg 400  
 cctgcgccgg ggagcatgga ggagagcgtg agaggctacg actggtcccc 450  
 gcgcgacgcc cggcgcagcc cagaccaggg ccggcagcag gcggagcggg 500  
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<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

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Val Phe Met Ile Leu Leu Ile Ile Val Tyr Trp Asp Ser Ala Gly  
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Ala Ala His Phe Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr  
35 40 45

Gly Pro Pro Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu  
50 55 60

Thr Ala Asp Ser Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser  
65 70 75

Ala Gly Val Lys Gln Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln  
80 85 90

Pro Pro Ala Pro Gly Ser Met Glu Glu Ser Val Arg Gly Tyr Asp  
95 100 105

Trp Ser Pro Arg Asp Ala Arg Arg Ser Pro Asp Gln Gly Arg Gln  
110 115 120

Gln Ala Glu Arg Arg Ser Val Leu Arg Gly Phe Cys Ala Asn Ser  
125 130 135

Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe Asp Asp Ile Pro  
140 145 150

Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg His Gly Ala  
155 160 165

Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp Lys Arg  
170 175 180

Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala Pro  
185 190 195

Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala  
200 205 210

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys  
215 220 225

Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys  
230 235 240

09978299-101501

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Leu | Phe | Val | Arg | Asp | Pro | Phe | Val | Arg | Leu | Ile | Ser | Ala | Phe |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Arg | Ser | Lys | Phe | Glu | Leu | Glu | Asn | Glu | Glu | Phe | Tyr | Arg | Lys | Phe |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Ala | Val | Pro | Met | Leu | Arg | Leu | Tyr | Ala | Asn | His | Thr | Ser | Leu | Pro |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Ala | Ser | Ala | Arg | Glu | Ala | Phe | Arg | Ala | Gly | Leu | Lys | Val | Ser | Phe |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ala | Asn | Phe | Ile | Gln | Tyr | Leu | Leu | Asp | Pro | His | Thr | Glu | Lys | Leu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Ala | Pro | Phe | Asn | Glu | His | Trp | Arg | Gln | Val | Tyr | Arg | Leu | Cys | His |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Pro | Cys | Gln | Ile | Asp | Tyr | Asp | Phe | Val | Gly | Lys | Leu | Glu | Thr | Leu |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Asp | Glu | Asp | Ala | Ala | Gln | Leu | Leu | Gln | Leu | Leu | Gln | Val | Asp | Arg |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Gln | Leu | Arg | Phe | Pro | Pro | Ser | Tyr | Arg | Asn | Arg | Thr | Ala | Ser | Ser |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Trp | Glu | Glu | Asp | Trp | Phe | Ala | Lys | Ile | Pro | Leu | Ala | Trp | Arg | Gln |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Gln | Leu | Tyr | Lys | Leu | Tyr | Glu | Ala | Asp | Phe | Val | Leu | Phe | Gly | Tyr |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Pro | Lys | Pro | Glu | Asn | Leu | Leu | Arg | Asp |     |     |     |     |     |     |  |
|     |     |     |     | 410 |     |     |     |     |     |     |     |     |     |     |  |

<210> 467  
 <211> 1071  
 <212> DNA  
 <213> Homo sapiens

<400> 467  
 tcggggccaga attcggcacg aggcggcacg agggcgacgg cctcacgggg 50  
 ctttgagggt gaaagaggcc cagagtagag agagagagag accgacgtac 100  
 acgggatggc tacgggaacg cgctatgccg ggaaggtggt ggtcgtgacc 150  
 gggggcgggc gcggcatcgg agctgggatc gtgcgcgcct tcgtgaacag 200  
 cggggcccca gtggttatct gcgacaagga tgagtctggg ggccggggccc 250  
 tggagcagga gctccctgga gctgtcttta tcctctgtga tgtgactcag 300  
 gaagatgatg tgaagaccct ggtttctgag accatccgcc gatttgccg 350  
 cctggattgt gttgtcaaca acgctggcca ccacccaccc ccacagaggc 400

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ctgaggagac ctctgcccag ggattccgcc agctgctgga gctgaaccta 450  
 ctggggacgt acaccttgac caagctcgcc ctcccctacc tgcggaagag 500  
 tcaagggaat gtcataca tctccagcct ggtgggggca atcgccagag 550  
 cccaggcagt tccctatgtg gccaccaagg gggcagtaac agccatgacc 600  
 aaagcttttg cccctggatga aagtccatat ggtgtccgag tcaactgtat 650  
 ctccccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700  
 tgccagaccc tagggccaca atccgagagg gcatgctggc ccagccactg 750  
 ggccgcatgg gccagcccgc tgaggctcggg gctgcggcag tgttcctggc 800  
 ctccgaagcc aacttctgca cgggcattga actgctcgtg acgggggggtg 850  
 cagagctggg gtacgggtgc aaggccagtc ggagcacccc cgtggacgcc 900  
 cccgatatac cttcctgatt tctctcattt ctacttgggg ccccttct 950  
 aggactctcc caccctaaac tccaacctgt atcagatgca gcccctaac 1000  
 ccttagactc taagcccagt tagcaagggtg ccgggtcacc ctgcagggtc 1050  
 ccataaaaac gatttgagc c 1071

<210> 468  
 <211> 270  
 <212> PRT  
 <213> Homo sapiens

<400> 468  
 Met Ala Thr Gly Thr Arg Tyr Ala Gly Lys Val Val Val Val Thr  
 1 5 10 15  
 Gly Gly Gly Arg Gly Ile Gly Ala Gly Ile Val Arg Ala Phe Val  
 20 25 30  
 Asn Ser Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly  
 35 40 45  
 Gly Arg Ala Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu  
 50 55 60  
 Cys Asp Val Thr Gln Glu Asp Asp Val Lys Thr Leu Val Ser Glu  
 65 70 75  
 Thr Ile Arg Arg Phe Gly Arg Leu Asp Cys Val Val Asn Asn Ala  
 80 85 90  
 Gly His His Pro Pro Pro Gln Arg Pro Glu Glu Thr Ser Ala Gln  
 95 100 105  
 Gly Phe Arg Gln Leu Leu Glu Leu Asn Leu Leu Gly Thr Tyr Thr  
 110 115 120

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|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Leu Thr Lys Leu | Ala Leu Pro Tyr Leu | Arg Lys Ser Gln Gly Asn | 125 | 130 | 135 |
| Val Ile Asn Ile | Ser Ser Leu Val Gly | Ala Ile Gly Gln Ala Gln | 140 | 145 | 150 |
| Ala Val Pro Tyr | Val Ala Thr Lys Gly | Ala Val Thr Ala Met Thr | 155 | 160 | 165 |
| Lys Ala Leu Ala | Leu Asp Glu Ser Pro | Tyr Gly Val Arg Val Asn | 170 | 175 | 180 |
| Cys Ile Ser Pro | Gly Asn Ile Trp Thr | Pro Leu Trp Glu Glu Leu | 185 | 190 | 195 |
| Ala Ala Leu Met | Pro Asp Pro Arg Ala | Thr Ile Arg Glu Gly Met | 200 | 205 | 210 |
| Leu Ala Gln Pro | Leu Gly Arg Met Gly | Gln Pro Ala Glu Val Gly | 215 | 220 | 225 |
| Ala Ala Ala Val | Phe Leu Ala Ser Glu | Ala Asn Phe Cys Thr Gly | 230 | 235 | 240 |
| Ile Glu Leu Leu | Val Thr Gly Gly Ala | Glu Leu Gly Tyr Gly Cys | 245 | 250 | 255 |
| Lys Ala Ser Arg | Ser Thr Pro Val Asp | Ala Pro Asp Ile Pro Ser | 260 | 265 | 270 |

<210> 469  
 <211> 687  
 <212> DNA  
 <213> Homo sapiens

<400> 469  
 aggcgggag cagctgcagg ctgacctgac agcttggcgg aatggactgg 50  
 cctcacaacc tgctgtttct tcttaccatt tccatcttcc tggggctggg 100  
 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150  
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200  
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250  
 ggcccagctg aggaacagct cagagctggc ccagagaaaag tgtgaggtca 300  
 acttgacgct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350  
 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400  
 gtgcctgtgt ctgggctgtg tgaaccctt caccatgcag gaggaccgca 450  
 gcatggtgag cgtgccggtg ttcagccagg ttctgtgag ccgccgcctc 500  
 tgcccgcac cgcgccgcac agggccttgc cgccagcgcg cagtcatgga 550



gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600  
gccaggccag cagcccagaga ccatactcct tgcacctttg tgccaagaaa 650  
ggcctatgaa aagtaaacac tgacttttga aagcaag 687

<210> 470  
<211> 180  
<212> PRT  
<213> Homo sapiens

<400> 470  
Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile  
1 5 10 15  
Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys  
20 25 30  
Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val  
35 40 45  
Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu  
50 55 60  
Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn  
65 70 75  
Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu  
80 85 90  
Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile  
95 100 105  
Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg  
110 115 120  
Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp  
125 130 135  
Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg  
140 145 150  
Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln  
155 160 165  
Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
170 175 180

<210> 471  
<211> 2368  
<212> DNA  
<213> Homo sapiens

<400> 471  
gcgcccgcag gcgtaggcgg ggtggccctt gcgtctcccg cttccttgaa 50  
aaacccggcg ggcgagcgag gctgcggggc ggccgctgcc cttccccaca 100

ctccccgccg agaagcctcg ctggcgccc aacatggcgg gtgggcgctg 150  
cggccccgag ctaacggcgc tctggccgc ctggatcgcg gctgtggcgg 200  
cgacggcagg ccccgaggag gccgcgctgc cgccggagca gagccgggtc 250  
cagcccatga ccgcctccaa ctggacgctg gtgatggagg gcgagtggat 300  
gctgaaattt tacgccccat ggtgtccatc ctgccagcag actgattcag 350  
aatgggaggc ttttgcaaag aatggtgaaa tacttcagat cagtgtgggg 400  
aaggtagatg tcattcaaga accaggtttg agtggcgcgt tctttgtcac 450  
cactctccca gcattttttc atgcaaagga tgggatattc cgccgttatt 500  
gtggcccagg aatcttcgaa gacctgcaga attatatctt agagaagaaa 550  
tggcaatcag togagcctct gactggctgg aaatccccag cttctctaac 600  
gatgtctgga atggctggtc ttttagcat ctctggcaag atatggcatc 650  
ttcacaacta tttcacagtg actcttgga ttctgcttg gtgttcttat 700  
gtgtttttcg tcatagccac cttggttttt ggctttttta tgggtctggt 750  
cttggtggtg atatcagaat gtttctatgt gccacttcca aggcatttat 800  
ctgagcggtc tgagcagaat cgagatcag aggaggctca tagagctgaa 850  
cagttgcagg atgcgaggga gaaaaagat gattcaaag aagaagaaaa 900  
caaagacagc cttgtagatg atgaagaaga gaaagaagat cttggcgatg 950  
aggatgaagc agaggaagaa gaggaggagg acaacttggc tgctggtgtg 1000  
gatgaggaga gaagtgaggc caatgatcag gggccccag gagaggacgg 1050  
tgtgaccggg gaggaagtag agcctgagga ggctgaagaa ggcatctctg 1100  
agcaaccctg ccagctgac acagagggtg tggaagactc cttgaggcag 1150  
cgtaaaagtc agcatgctga caagggactg tagatttaat gatgcgtttt 1200  
caagaataca caccaaaaca atatgtcagc ttcccttttg cctgcagttt 1250  
gtaccaaata ctttaattttt cctgaatgag caagcttctc ttaaaagatg 1300  
ctctctagtc atttggtctc atggcagtaa gcctcatgta tactaaggag 1350  
agtcttccag gtgtgacaat caggatatag aaaaacaaac gtagtggttg 1400  
gatctgtttg gagactggga tgggaacaag ttcatttact taggggtcag 1450  
agagtctcga ccagaggagg ccattcccag tcctaatacag caccttccag 1500  
agacaaggct gcaggccctg tgaaatgaaa gccaagcagg agccttggt 1550

cctgagcatc cccaaagtgt aacgtagaag ccttgcatcc ttttcttggtg 1600  
 taaagtattt atttttgtca aattgcagga aacatcaggc accacagtgc 1650  
 atgaaaaatc tttcacagct agaaattgaa agggccttgg gtatagagag 1700  
 cagctcagaa gtcacccag ccctctgaat ctctgtgct atgttttatt 1750  
 tcttaccttt aatttttcca gcatttccac catgggcatt caggctctcc 1800  
 acactcttca ctattatctc ttggtcagag gactccaata acagccagggt 1850  
 ttacatgaac tgtgtttgtt cattctgacc taaggggttt agataatcag 1900  
 taaccataac ccctgaagct gtgactgcc aacatctcaa atgaaatgtt 1950  
 gtggccatca gagactcaaa aggaagtaag gattttacaa gacagattaa 2000  
 aaaaaaattg ttttgtccaa aatatagttg ttgttgattt ttttttaagt 2050  
 tttctaagca atatttttca agccagaagt cctctaagtc ttgccagtac 2100  
 aaggtagtct tgtgaagaaa agttgaatac tgttttgttt tcatctcaag 2150  
 gggttccctg ggtcttgaac tactttaata ataactaaaa aaccacttct 2200  
 gattttcctt cagtgatgtg cttttggtga aagaattaat gaactccagt 2250  
 acctgaaagt gaaagatttg attttgtttc catcttctgt aatcttccaa 2300  
 agaattatat ctttgtaaata ctctcaatac tcaatctact gtaagtaacc 2350  
 agggaggcta atttcttt 2368

<210> 472  
 <211> 349  
 <212> PRT  
 <213> Homo sapiens

<400> 472  
 Met Ala Gly Gly Arg Cys Gly Pro Gln Leu Thr Ala Leu Leu Ala  
 1 5 10 15  
 Ala Trp Ile Ala Ala Val Ala Ala Thr Ala Gly Pro Glu Glu Ala  
 20 25 30  
 Ala Leu Pro Pro Glu Gln Ser Arg Val Gln Pro Met Thr Ala Ser  
 35 40 45  
 Asn Trp Thr Leu Val Met Glu Gly Glu Trp Met Leu Lys Phe Tyr  
 50 55 60  
 Ala Pro Trp Cys Pro Ser Cys Gln Gln Thr Asp Ser Glu Trp Glu  
 65 70 75  
 Ala Phe Ala Lys Asn Gly Glu Ile Leu Gln Ile Ser Val Gly Lys  
 80 85 90

|                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val             | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95  | 100 | 105 |
| Thr             | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 |
| Arg             | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 |
| Leu             | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 |
| Ser             | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 |
| Ile             | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr | 170 | 175 | 180 |
| Leu             | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala | 185 | 190 | 195 |
| Thr             | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile | 200 | 205 | 210 |
| Ser             | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg | 215 | 220 | 225 |
| Ser             | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln | 230 | 235 | 240 |
| Leu             | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu | 245 | 250 | 255 |
| Asn             | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu | 260 | 265 | 270 |
| Gly             | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu | 275 | 280 | 285 |
| Ala             | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly | 290 | 295 | 300 |
| Pro             | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu | 305 | 310 | 315 |
| Glu             | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr | 320 | 325 | 330 |
| Glu             | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala | 335 | 340 | 345 |
| Asp Lys Gly Leu |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 473  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 473  
gtccagccca tgaccgcctc caac 24

<210> 474  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 474  
ctctcctcat ccacaccagc agcc 24

<210> 475  
<211> 44  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 475  
gtggatgctg aaattttacg ccccatgggtg tccatcctgc cagc 44

<210> 476  
<211> 2478  
<212> DNA  
<213> Homo sapiens

<400> 476  
atctggttga actacttaag cttaatttgt taaactccgg taagtaccta 50  
gcccatga tttgactcag agattctctt ttgtccacag acagtcatct 100  
caggggcaga aagaaaagag ctcccaaatg ctatatctat tcaggggctc 150  
tcaagaacaa tggaatatca tcttgattta gaaaatttgg atgaagatgg 200  
atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250  
tttcagagaa aggatcgtgt gctgcatctc ctcttgggcg cctcattgct 300  
gtaatttttg gaatcctatg cttggtaata ctggtgatag ctgtggctct 350  
gggtaccatg ggggttcttt ccagcccttg tcctcctaata tggattatat 400  
atgagaagag ctgttatcta ttcagcatgt cactaaatc ctgggatgga 450  
agtaaaagac aatgctggca actgggctct aatctoctaa agatagacag 500  
ctcaaagaa ttgggattta tagtaaaaca agtgtcttcc caacctgata 550  
attcattttg gataggcctt tctcggcccc agactgaggt accatggctc 600

tgggaggatg gatcaacatt ctcttctaac ttatttcaga tcagaaccac 650  
 agctacccaa gaaaacccat ctccaaattg tgtatggatt cacgtgtcag 700  
 tcatttatga ccaactgtgt agtgtgccct catatagtat ttgtgagaag 750  
 aagttttcaa tgtaagagga aggggtggaga aggagagaga aatatgtgag 800  
 gtagtaagga ggacagaaaa cagaacagaa aagagtaaca gctgagggtca 850  
 agataaatgc agaaaatggt tagagagctt ggccaactgt aatcttaacc 900  
 aagaaattga agggagagggc tgtgatttct gtatttgtcg acctacaggt 950  
 aggctagtat ttttttcta gttagtagat ccctagacat ggaatcaggg 1000  
 cagccaagct tgagttttta ttttttattt atttattttt ttgagatagg 1050  
 gtctcacttt gttaccaggc ctggagtgtca gtggcacaat ctcgactcac 1100  
 tgcagctatc tctcgccctca gccctcaag tagctgggac tacagggtgca 1150  
 tgccaccatg ccaggctaatt ttttggtgtt tttttagag actgggtttt 1200  
 gccatgttga ccaagctggc ctctaactcc tgggcttaag tgatctgccc 1250  
 gccttggcct cccaaagtgc tgggattaca gatgtgagcc accacacctg 1300  
 gccccaaagt tgaattttca ttctgccatt gacttggcat ttaccttggg 1350  
 taagccataa gcgaatctta atttctggct ctatcagagt tgtttcatgc 1400  
 tcaacaatgc cattgaagtgc cacggtgtgt tgccacgatt tgaccctcaa 1450  
 cttctagcag tatatcagtt atgaactgag ggtgaaatat atttctgaat 1500  
 agctaaatga agaaatggga aaaaatcttc accacagtca gagcaatttt 1550  
 attattttca tcagtatgat cataattatg attatcatct tagtaaaaag 1600  
 caggaaactcc tactttttct ttatcaatta aatagctcag agagtacatc 1650  
 tgccatatct ctaatagaat cttttttttt tttttttttt tttgagacag 1700  
 agtttctgctc ttgttgccca ggctggagtgc caacggcacg atctcggctc 1750  
 accgcaacct ccgccccctg ggttcaagca attctcctgc ctgagcctcc 1800  
 caagtagctg ggattacagt caggcaccac cacaccggc taattttgta 1850  
 tttttttagt agagacaggg tttotccatg tcggtcaggg tagtcccgaa 1900  
 ctctgacct caagtgatct gcctgcctcg gcctccaag tgctgggatt 1950  
 acaggcgtga gccactgcac ccagcctaga atcttgata atatgtaatt 2000  
 gtagggaaac tgctctcata ggaaagtgtt ctgcttttta aatacaaaaa 2050

tacataaaaa tacataaaat ctgatgatga atataaaaaa gtaaccaacc 2100  
tcattggaac aagtattaac attttggaat atgttttatt agttttgtga 2150  
tgtactgttt tacaatTTTT accatTTTT tCagtaatta ctgtaaaatg 2200  
gtattattgg aatgaaacta tatttcctca tgtgctgatt tgtcttattt 2250  
ttttcatact ttcccaactgg tgctatTTTT atttccaatg gatatttctg 2300  
tattactagg gaggcattta cagtcctcta atgttgatta atatgtgaaa 2350  
agaaattgta ccaatTTTtac taaattatgc agtttaaaat ggatgatttt 2400  
atgttatgtg gatttcattt caataaaaaa aaactcttat caaaaaaaaaa 2450  
aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 2478

<210> 477  
<211> 201  
<212> PRT  
<213> Homo sapiens

<400> 477

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Tyr | His | Pro | Asp | Leu | Glu | Asn | Leu | Asp | Glu | Asp | Gly | Tyr | 1   | 5   | 10  | 15 |
| Thr | Gln | Leu | His | Phe | Asp | Ser | Gln | Ser | Asn | Thr | Arg | Ile | Ala | Val | 20  | 25  | 30  |    |
| Val | Ser | Glu | Lys | Gly | Ser | Cys | Ala | Ala | Ser | Pro | Pro | Trp | Arg | Leu | 35  | 40  | 45  |    |
| Ile | Ala | Val | Ile | Leu | Gly | Ile | Leu | Cys | Leu | Val | Ile | Leu | Val | Ile | 50  | 55  | 60  |    |
| Ala | Val | Val | Leu | Gly | Thr | Met | Gly | Val | Leu | Ser | Ser | Pro | Cys | Pro | 65  | 70  | 75  |    |
| Pro | Asn | Trp | Ile | Ile | Tyr | Glu | Lys | Ser | Cys | Tyr | Leu | Phe | Ser | Met | 80  | 85  | 90  |    |
| Ser | Leu | Asn | Ser | Trp | Asp | Gly | Ser | Lys | Arg | Gln | Cys | Trp | Gln | Leu | 95  | 100 | 105 |    |
| Gly | Ser | Asn | Leu | Leu | Lys | Ile | Asp | Ser | Ser | Asn | Glu | Leu | Gly | Phe | 110 | 115 | 120 |    |
| Ile | Val | Lys | Gln | Val | Ser | Ser | Gln | Pro | Asp | Asn | Ser | Phe | Trp | Ile | 125 | 130 | 135 |    |
| Gly | Leu | Ser | Arg | Pro | Gln | Thr | Glu | Val | Pro | Trp | Leu | Trp | Glu | Asp | 140 | 145 | 150 |    |
| Gly | Ser | Thr | Phe | Ser | Ser | Asn | Leu | Phe | Gln | Ile | Arg | Thr | Thr | Ala | 155 | 160 | 165 |    |
| Thr | Gln | Glu | Asn | Pro | Ser | Pro | Asn | Cys | Val | Trp | Ile | His | Val | Ser |     |     |     |    |

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
|                 | 170                 |                         | 175 |     | 180 |
| Val Ile Tyr Asp | Gln Leu Cys Ser Val | Pro Ser Tyr Ser Ile Cys |     |     |     |
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 Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser  
 35 40 45  
 Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn  
 50 55 60  
 Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His  
 65 70 75

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ala | Ser | Arg | Ser | Phe | Pro | Asp | Pro | Arg | Gly | Leu | Tyr | His | Phe |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Cys | Leu | Tyr | Trp | Asn | Arg | His | Ala | Gly | Arg | Leu | His | Leu | Leu | Tyr |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Gly | Lys | Arg | Asp | Phe | Leu | Leu | Ser | Asp | Lys | Ala | Ser | Ser | Leu | Leu |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Cys | Phe | Gln | His | Gln | Glu | Glu | Ser | Leu | Ala | Gln | Gly | Pro | Pro | Leu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Leu | Ala | Thr | Ser | Val | Thr | Ser | Trp | Trp | Ser | Pro | Gln | Asn | Ile | Ser |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Leu | Pro | Ser | Ala | Ala | Ser | Phe | Thr | Phe | Ser | Phe | His | Ser | Pro | Pro |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| His | Thr | Ala | Ala | His | Asn | Ala | Ser | Val | Asp | Met | Cys | Glu | Leu | Lys |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Arg | Asp | Leu | Gln | Leu | Leu | Ser | Gln | Phe | Leu | Lys | His | Pro | Gln | Lys |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ala | Ser | Arg | Arg | Pro | Ser | Ala | Ala | Pro | Ala | Ser | Gln | Gln | Leu | Gln |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Ser | Leu | Glu | Ser | Lys | Leu | Thr | Ser | Val | Arg | Phe | Met | Gly | Asp | Met |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Val | Ser | Phe | Glu | Glu | Asp | Arg | Ile | Asn | Ala | Thr | Val | Trp | Lys | Leu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gln | Pro | Thr | Ala | Gly | Leu | Gln | Asp | Leu | His | Ile | His | Ser | Arg | Gln |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Glu | Glu | Glu | Gln | Ser | Glu | Ile | Met | Glu | Tyr | Ser | Val | Leu | Leu | Pro |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Arg | Thr | Leu | Phe | Gln | Arg | Thr | Lys | Gly | Arg | Ser | Gly | Glu | Ala | Glu |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Lys | Arg | Leu | Leu | Leu | Val | Asp | Phe | Ser | Ser | Gln | Ala | Leu | Phe | Gln |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Asp | Lys | Asn | Ser | Ser | Gln | Val | Leu | Gly | Glu | Lys | Val | Leu | Gly | Ile |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Val | Val | Gln | Asn | Thr | Lys | Val | Ala | Asn | Leu | Thr | Glu | Pro | Val | Val |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Leu | Thr | Phe | Gln | His | Gln | Leu | Gln | Pro | Lys | Asn | Val | Thr | Leu | Gln |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Cys | Val | Phe | Trp | Val | Glu | Asp | Pro | Thr | Leu | Ser | Ser | Pro | Gly | His |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Trp | Ser | Ser | Ala | Gly | Cys | Glu | Thr | Val | Arg | Arg | Glu | Thr | Gln | Thr |  |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 365                                 | 370                     | 375 |
| Ser Cys Phe Cys Asn His Leu Thr Tyr | Phe Ala Val Leu Met Val |     |
| 380                                 | 385                     | 390 |
| Ser Ser Val Glu Val Asp Ala Val His | Lys His Tyr Leu Ser Leu |     |
| 395                                 | 400                     | 405 |
| Leu Ser Tyr Val Gly Cys Val Val Ser | Ala Leu Ala Cys Leu Val |     |
| 410                                 | 415                     | 420 |
| Thr Ile Ala Ala Tyr Leu Cys Ser Arg | Val Pro Leu Pro Cys Arg |     |
| 425                                 | 430                     | 435 |
| Arg Lys Pro Arg Asp Tyr Thr Ile Lys | Val His Met Asn Leu Leu |     |
| 440                                 | 445                     | 450 |
| Leu Ala Val Phe Leu Leu Asp Thr Ser | Phe Leu Leu Ser Glu Pro |     |
| 455                                 | 460                     | 465 |
| Val Ala Leu Thr Gly Ser Glu Ala Gly | Cys Arg Ala Ser Ala Ile |     |
| 470                                 | 475                     | 480 |
| Phe Leu His Phe Ser Leu Leu Thr Cys | Leu Ser Trp Met Gly Leu |     |
| 485                                 | 490                     | 495 |
| Glu Gly Tyr Asn Leu Tyr Arg Leu Val | Val Glu Val Phe Gly Thr |     |
| 500                                 | 505                     | 510 |
| Tyr Val Pro Gly Tyr Leu Leu Lys Leu | Ser Ala Met Gly Trp Gly |     |
| 515                                 | 520                     | 525 |
| Phe Pro Ile Phe Leu Val Thr Leu Val | Ala Leu Val Asp Val Asp |     |
| 530                                 | 535                     | 540 |
| Asn Tyr Gly Pro Ile Ile Leu Ala Val | His Arg Thr Pro Glu Gly |     |
| 545                                 | 550                     | 555 |
| Val Ile Tyr Pro Ser Met Cys Trp Ile | Arg Asp Ser Leu Val Ser |     |
| 560                                 | 565                     | 570 |
| Tyr Ile Thr Asn Leu Gly Leu Phe Ser | Leu Val Phe Leu Phe Asn |     |
| 575                                 | 580                     | 585 |
| Met Ala Met Leu Ala Thr Met Val Val | Gln Ile Leu Arg Leu Arg |     |
| 590                                 | 595                     | 600 |
| Pro His Thr Gln Lys Trp Ser His Val | Leu Thr Leu Leu Gly Leu |     |
| 605                                 | 610                     | 615 |
| Ser Leu Val Leu Gly Leu Pro Trp Ala | Leu Ile Phe Phe Ser Phe |     |
| 620                                 | 625                     | 630 |
| Ala Ser Gly Thr Phe Gln Leu Val Val | Leu Tyr Leu Phe Ser Ile |     |
| 635                                 | 640                     | 645 |
| Ile Thr Ser Phe Gln Gly Phe Leu Ile | Phe Ile Trp Tyr Trp Ser |     |
| 650                                 | 655                     | 660 |

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Ser Arg Ile

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 <212> PRT  
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<400> 488  
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 35 40 45  
 His Glu Arg Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser  
 50 55 60  
 Pro Arg Phe Pro His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp  
 65 70 75  
 Arg Leu Val Ala Val Glu Glu Asn Val Trp Ile Gln Leu Thr Phe  
 80 85 90  
 Asp Glu Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp Ile Cys Lys  
 95 100 105  
 Tyr Asp Phe Val Glu Val Glu Glu Pro Ser Asp Gly Thr Ile Leu  
 110 115 120  
 Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly Lys Gln Ile Ser  
 125 130 135  
 Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe  
 140 145 150  
 Pro Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val Met Pro  
 155 160 165  
 Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala  
 170 175 180  
 Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr  
 185 190 195

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Glu | Asp | Leu | Ile | Arg | Tyr | Leu | Glu | Pro | Glu | Arg | Trp | Gln | Leu |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Asp | Leu | Glu | Asp | Leu | Tyr | Arg | Pro | Thr | Trp | Gln | Leu | Leu | Gly | Lys |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Ala | Phe | Val | Phe | Gly | Arg | Lys | Ser | Arg | Val | Val | Asp | Leu | Asn | Leu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Thr | Glu | Glu | Val | Arg | Leu | Tyr | Ser | Cys | Thr | Pro | Arg | Asn | Phe |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Ser | Val | Ser | Ile | Arg | Glu | Glu | Leu | Lys | Arg | Thr | Asp | Thr | Ile | Phe |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Trp | Pro | Gly | Cys | Leu | Leu | Val | Lys | Arg | Cys | Gly | Gly | Asn | Cys | Ala |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Cys | Cys | Leu | His | Asn | Cys | Asn | Glu | Cys | Gln | Cys | Val | Pro | Ser | Lys |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Val | Thr | Lys | Lys | Tyr | His | Glu | Val | Leu | Gln | Leu | Arg | Pro | Lys | Thr |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Gly | Val | Arg | Gly | Leu | His | Lys | Ser | Leu | Thr | Asp | Val | Ala | Leu | Glu |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| His | His | Glu | Glu | Cys | Asp | Cys | Val | Cys | Arg | Gly | Ser | Thr | Gly | Gly |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |

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tctggatggt ccaaagaacc atgtgatcgt ggactgcaca gacaagcatt 250  
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 actagagata ccgcagggcc tccgcctag cttacagctt ctcagccttg 550  
 aggccaacaa catcttttcc atcagaaaag agaactctaac agaactggcc 600  
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 tgtaaaaata attctcccct acagatccct gtaaagtgtt ttgatgcgt 950  
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<400> 496

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Phe | Pro | Met | Trp | Thr | Leu | Lys | Arg | Gln | Ile | Leu | Ile | Leu |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| His | Ile | Pro | Asp | Ile | Ser | Pro | Ala | Ser | Phe | His | Arg | Leu | Asp | His |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Leu | Val | Glu | Ile | Asp | Phe | Arg | Cys | Asn | Cys | Val | Pro | Ile | Pro | Leu |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Gly | Ser | Lys | Asn | Asn | Met | Cys | Ile | Lys | Arg | Leu | Gln | Ile | Lys | Pro |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Arg | Ser | Phe | Ser | Gly | Leu | Thr | Tyr | Leu | Lys | Ser | Leu | Tyr | Leu | Asp |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gly | Asn | Gln | Leu | Leu | Glu | Ile | Pro | Gln | Gly | Leu | Pro | Pro | Ser | Leu |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Gln | Leu | Leu | Ser | Leu | Glu | Ala | Asn | Asn | Ile | Phe | Ser | Ile | Arg | Lys |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Glu | Asn | Leu | Thr | Glu | Leu | Ala | Asn | Ile | Glu | Ile | Leu | Tyr | Leu | Gly |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Gln | Asn | Cys | Tyr | Tyr | Arg | Asn | Pro | Cys | Tyr | Val | Ser | Tyr | Ser | Ile |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Glu | Lys | Asp | Ala | Phe | Leu | Asn | Leu | Thr | Lys | Leu | Lys | Val | Leu | Ser |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Leu | Lys | Asp | Asn | Asn | Val | Thr | Ala | Val | Pro | Thr | Val | Leu | Pro | Ser |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Thr | Leu | Thr | Glu | Leu | Tyr | Leu | Tyr | Asn | Asn | Met | Ile | Ala | Lys | Ile |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gln | Glu | Asp | Asp | Phe | Asn | Asn | Leu | Asn | Gln | Leu | Gln | Ile | Leu | Asp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |

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|   |     |     |     |
|---|-----|-----|-----|
| Leu Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys | 260 | 265 | 270 |
| Ala Pro Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala | 275 | 280 | 285 |
| Phe Asp Ala Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn | 290 | 295 | 300 |
| Ser Leu Gln His Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys | 305 | 310 | 315 |
| Leu Gln Glu Leu Asp Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile | 320 | 325 | 330 |
| Gly Asp Ala Lys Phe Leu His Phe Leu Pro Ser Leu Ile Gln Leu | 335 | 340 | 345 |
| Asp Leu Ser Phe Asn Phe Glu Leu Gln Val Tyr Arg Ala Ser Met | 350 | 355 | 360 |
| Asn Leu Ser Gln Ala Phe Ser Ser Leu Lys Ser Leu Lys Ile Leu | 365 | 370 | 375 |
| Arg Ile Arg Gly Tyr Val Phe Lys Glu Leu Lys Ser Phe Asn Leu | 380 | 385 | 390 |
| Ser Pro Leu His Asn Leu Gln Asn Leu Glu Val Leu Asp Leu Gly | 395 | 400 | 405 |
| Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met Phe Lys Gln Phe | 410 | 415 | 420 |
| Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys Ile Ser Pro | 425 | 430 | 435 |
| Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala Arg Thr | 440 | 445 | 450 |
| Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His Tyr | 455 | 460 | 465 |
| Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys | 470 | 475 | 480 |
| Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly | 485 | 490 | 495 |
| Gln Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser | 500 | 505 | 510 |
| Ser Asp Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser | 515 | 520 | 525 |
| Gly Asn Leu Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro | 530 | 535 | 540 |
| Leu Ala Glu Leu Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp |     |     |     |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 545                                 | 550                     | 555 |
| Leu Leu His Ser Thr Ala Phe Glu Glu | Leu His Lys Leu Glu Val |     |
| 560                                 | 565                     | 570 |
| Leu Asp Ile Ser Ser Asn Ser His Tyr | Phe Gln Ser Glu Gly Ile |     |
| 575                                 | 580                     | 585 |
| Thr His Met Leu Asn Phe Thr Lys Asn | Leu Lys Val Leu Gln Lys |     |
| 590                                 | 595                     | 600 |
| Leu Met Met Asn Asp Asn Asp Ile Ser | Ser Ser Thr Ser Arg Thr |     |
| 605                                 | 610                     | 615 |
| Met Glu Ser Glu Ser Leu Arg Thr Leu | Glu Phe Arg Gly Asn His |     |
| 620                                 | 625                     | 630 |
| Leu Asp Val Leu Trp Arg Glu Gly Asp | Asn Arg Tyr Leu Gln Leu |     |
| 635                                 | 640                     | 645 |
| Phe Lys Asn Leu Leu Lys Leu Glu Glu | Leu Asp Ile Ser Lys Asn |     |
| 650                                 | 655                     | 660 |
| Ser Leu Ser Phe Leu Pro Ser Gly Val | Phe Asp Gly Met Pro Pro |     |
| 665                                 | 670                     | 675 |
| Asn Leu Lys Asn Leu Ser Leu Ala Lys | Asn Gly Leu Lys Ser Phe |     |
| 680                                 | 685                     | 690 |
| Ser Trp Lys Lys Leu Gln Cys Leu Lys | Asn Leu Glu Thr Leu Asp |     |
| 695                                 | 700                     | 705 |
| Leu Ser His Asn Gln Leu Thr Thr Val | Pro Glu Arg Leu Ser Asn |     |
| 710                                 | 715                     | 720 |
| Cys Ser Arg Ser Leu Lys Asn Leu Ile | Leu Lys Asn Asn Gln Ile |     |
| 725                                 | 730                     | 735 |
| Arg Ser Leu Thr Lys Tyr Phe Leu Gln | Asp Ala Phe Gln Leu Arg |     |
| 740                                 | 745                     | 750 |
| Tyr Leu Asp Leu Ser Ser Asn Lys Ile | Gln Met Ile Gln Lys Thr |     |
| 755                                 | 760                     | 765 |
| Ser Phe Pro Glu Asn Val Leu Asn Asn | Leu Lys Met Leu Leu Leu |     |
| 770                                 | 775                     | 780 |
| His His Asn Arg Phe Leu Cys Thr Cys | Asp Ala Val Trp Phe Val |     |
| 785                                 | 790                     | 795 |
| Trp Trp Val Asn His Thr Glu Val Thr | Ile Pro Tyr Leu Ala Thr |     |
| 800                                 | 805                     | 810 |
| Asp Val Thr Cys Val Gly Pro Gly Ala | His Lys Gly Gln Ser Val |     |
| 815                                 | 820                     | 825 |
| Ile Ser Leu Asp Leu Tyr Thr Cys Glu | Leu Asp Leu Thr Asn Leu |     |
| 830                                 | 835                     | 840 |



|     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |  |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Ile | Leu | Phe | Ser | Leu  | Ser | Ile | Ser | Val | Ser  | Leu | Phe | Leu | Met | Val  |  |
|     |     |     |     | 845  |     |     |     |     | 850  |     |     |     |     | 855  |  |
| Met | Met | Thr | Ala | Ser  | His | Leu | Tyr | Phe | Trp  | Asp | Val | Trp | Tyr | Ile  |  |
|     |     |     |     | 860  |     |     |     |     | 865  |     |     |     |     | 870  |  |
| Tyr | His | Phe | Cys | Lys  | Ala | Lys | Ile | Lys | Gly  | Tyr | Gln | Arg | Leu | Ile  |  |
|     |     |     |     | 875  |     |     |     |     | 880  |     |     |     |     | 885  |  |
| Ser | Pro | Asp | Cys | Cys  | Tyr | Asp | Ala | Phe | Ile  | Val | Tyr | Asp | Thr | Lys  |  |
|     |     |     |     | 890  |     |     |     |     | 895  |     |     |     |     | 900  |  |
| Asp | Pro | Ala | Val | Thr  | Glu | Trp | Val | Leu | Ala  | Glu | Leu | Val | Ala | Lys  |  |
|     |     |     |     | 905  |     |     |     |     | 910  |     |     |     |     | 915  |  |
| Leu | Glu | Asp | Pro | Arg  | Glu | Lys | His | Phe | Asn  | Leu | Cys | Leu | Glu | Glu  |  |
|     |     |     |     | 920  |     |     |     |     | 925  |     |     |     |     | 930  |  |
| Arg | Asp | Trp | Leu | Pro  | Gly | Gln | Pro | Val | Leu  | Glu | Asn | Leu | Ser | Gln  |  |
|     |     |     |     | 935  |     |     |     |     | 940  |     |     |     |     | 945  |  |
| Ser | Ile | Gln | Leu | Ser  | Lys | Lys | Thr | Val | Phe  | Val | Met | Thr | Asp | Lys  |  |
|     |     |     |     | 950  |     |     |     |     | 955  |     |     |     |     | 960  |  |
| Tyr | Ala | Lys | Thr | Glu  | Asn | Phe | Lys | Ile | Ala  | Phe | Tyr | Leu | Ser | His  |  |
|     |     |     |     | 965  |     |     |     |     | 970  |     |     |     |     | 975  |  |
| Gln | Arg | Leu | Met | Asp  | Glu | Lys | Val | Asp | Val  | Ile | Ile | Leu | Ile | Phe  |  |
|     |     |     |     | 980  |     |     |     |     | 985  |     |     |     |     | 990  |  |
| Leu | Glu | Lys | Pro | Phe  | Gln | Lys | Ser | Lys | Phe  | Leu | Gln | Leu | Arg | Lys  |  |
|     |     |     |     | 995  |     |     |     |     | 1000 |     |     |     |     | 1005 |  |
| Arg | Leu | Cys | Gly | Ser  | Ser | Val | Leu | Glu | Trp  | Pro | Thr | Asn | Pro | Gln  |  |
|     |     |     |     | 1010 |     |     |     |     | 1015 |     |     |     |     | 1020 |  |
| Ala | His | Pro | Tyr | Phe  | Trp | Gln | Cys | Leu | Lys  | Asn | Ala | Leu | Ala | Thr  |  |
|     |     |     |     | 1025 |     |     |     |     | 1030 |     |     |     |     | 1035 |  |
| Asp | Asn | His | Val | Ala  | Tyr | Ser | Gln | Val | Phe  | Lys | Glu | Thr | Val |      |  |
|     |     |     |     | 1040 |     |     |     |     | 1045 |     |     |     |     |      |  |

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 <212> DNA  
 <213> Homo sapiens

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 cctgctaata tctggttcct gtgagttatg cgccgaagaa aatttttcta 150  
 gaagctatcc ttgtgatgag aaaaagcaaa atgactcagt tattgcagag 200  
 tgcagcaatc gtcgactaca ggaagttccc caaacggtgg gcaaatatgt 250

gacagaacta gacctgtctg ataatttcat cacacacata acgaatgaat 300  
 catttcaagg gctgcaaaat ctactataaa taaatctaaa ccacaacccc 350  
 aatgtacagc accagaacgg aaatcccggt atacaatcaa atggcttgaa 400  
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 ttgaagacaa ccagttaccc caaataacct ctggtttgcc agagtctttg 500  
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 acgctgacaa atttgaggtt gctatcacta tctttcaatt ctctttcaca 700  
 cgtgccaccc aaactgccaa gctccctacg caaacttttt ctgagcaaca 750  
 ccagatcaa atacattagt gaagaagatt tcaagggtt gataaattta 800  
 acattactag atttaagcgg gaactgtccg aggtgcttca atgccccatt 850  
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| Met | Glu | Asn | Met | Phe | Leu | Gln | Ser | Ser | Met | Leu | Thr | Cys | Ile | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ile | Ser | Gly | Ser | Cys | Glu | Leu | Cys | Ala | Glu | Glu | Asn | Phe |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ser | Tyr | Pro | Cys | Asp | Glu | Lys | Lys | Gln | Asn | Asp | Ser | Val |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Glu | Cys | Ser | Asn | Arg | Arg | Leu | Gln | Glu | Val | Pro | Gln | Thr |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|                 |                         |                         |
|-----------------|-------------------------|-------------------------|
| Val Gly Lys Tyr | Val Thr Glu Leu Asp     | Leu Ser Asp Asn Phe Ile |
| 65              | 70                      | 75                      |
| Thr His Ile Thr | Asn Glu Ser Phe Gln Gly | Leu Gln Asn Leu Thr     |
| 80              | 85                      | 90                      |
| Lys Ile Asn Leu | Asn His Asn Pro Asn     | Val Gln His Gln Asn Gly |
| 95              | 100                     | 105                     |
| Asn Pro Gly Ile | Gln Ser Asn Gly Leu     | Asn Ile Thr Asp Gly Ala |
| 110             | 115                     | 120                     |
| Phe Leu Asn Leu | Lys Asn Leu Arg Glu     | Leu Leu Leu Glu Asp Asn |
| 125             | 130                     | 135                     |
| Gln Leu Pro Gln | Ile Pro Ser Gly Leu     | Pro Glu Ser Leu Thr Glu |
| 140             | 145                     | 150                     |
| Leu Ser Leu Ile | Gln Asn Asn Ile Tyr     | Asn Ile Thr Lys Glu Gly |
| 155             | 160                     | 165                     |
| Ile Ser Arg Leu | Ile Asn Leu Lys Asn     | Leu Tyr Leu Ala Trp Asn |
| 170             | 175                     | 180                     |
| Cys Tyr Phe Asn | Lys Val Cys Glu Lys     | Thr Asn Ile Glu Asp Gly |
| 185             | 190                     | 195                     |
| Val Phe Glu Thr | Leu Thr Asn Leu Glu     | Leu Leu Ser Leu Ser Phe |
| 200             | 205                     | 210                     |
| Asn Ser Leu Ser | His Val Pro Pro Lys     | Leu Pro Ser Ser Leu Arg |
| 215             | 220                     | 225                     |
| Lys Leu Phe Leu | Ser Asn Thr Gln Ile     | Lys Tyr Ile Ser Glu Glu |
| 230             | 235                     | 240                     |
| Asp Phe Lys Gly | Leu Ile Asn Leu Thr     | Leu Leu Asp Leu Ser Gly |
| 245             | 250                     | 255                     |
| Asn Cys Pro Arg | Cys Phe Asn Ala Pro     | Phe Pro Cys Val Pro Cys |
| 260             | 265                     | 270                     |
| Asp Gly Gly Ala | Ser Ile Asn Ile Asp     | Arg Phe Ala Phe Gln Asn |
| 275             | 280                     | 285                     |
| Leu Thr Gln Leu | Arg Tyr Leu Asn Leu     | Ser Ser Thr Ser Leu Arg |
| 290             | 295                     | 300                     |
| Lys Ile Asn Ala | Ala Trp Phe Lys Asn     | Met Pro His Leu Lys Val |
| 305             | 310                     | 315                     |
| Leu Asp Leu Glu | Phe Asn Tyr Leu Val     | Gly Glu Ile Val Ser Gly |
| 320             | 325                     | 330                     |
| Ala Phe Leu Thr | Met Leu Pro Arg Leu     | Glu Ile Leu Asp Leu Ser |
| 335             | 340                     | 345                     |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Tyr | Ile | Lys | Gly | Ser | Tyr | Pro | Gln | His | Ile | Asn | Ile | Ser | 350 | 355 | 360 |
| Arg | Asn | Phe | Ser | Lys | Leu | Leu | Ser | Leu | Arg | Ala | Leu | His | Leu | Arg | 365 | 370 | 375 |
| Gly | Tyr | Val | Phe | Gln | Glu | Leu | Arg | Glu | Asp | Asp | Phe | Gln | Pro | Leu | 380 | 385 | 390 |
| Met | Gln | Leu | Pro | Asn | Leu | Ser | Thr | Ile | Asn | Leu | Gly | Ile | Asn | Phe | 395 | 400 | 405 |
| Ile | Lys | Gln | Ile | Asp | Phe | Lys | Leu | Phe | Gln | Asn | Phe | Ser | Asn | Leu | 410 | 415 | 420 |
| Glu | Ile | Ile | Tyr | Leu | Ser | Glu | Asn | Arg | Ile | Ser | Pro | Leu | Val | Lys | 425 | 430 | 435 |
| Asp | Thr | Arg | Gln | Ser | Tyr | Ala | Asn | Ser | Ser | Ser | Phe | Gln | Arg | His | 440 | 445 | 450 |
| Ile | Arg | Lys | Arg | Arg | Ser | Thr | Asp | Phe | Glu | Phe | Asp | Pro | His | Ser | 455 | 460 | 465 |
| Asn | Phe | Tyr | His | Phe | Thr | Arg | Pro | Leu | Ile | Lys | Pro | Gln | Cys | Ala | 470 | 475 | 480 |
| Ala | Tyr | Gly | Lys | Ala | Leu | Asp | Leu | Ser | Leu | Asn | Ser | Ile | Phe | Phe | 485 | 490 | 495 |
| Ile | Gly | Pro | Asn | Gln | Phe | Glu | Asn | Leu | Pro | Asp | Ile | Ala | Cys | Leu | 500 | 505 | 510 |
| Asn | Leu | Ser | Ala | Asn | Ser | Asn | Ala | Gln | Val | Leu | Ser | Gly | Thr | Glu | 515 | 520 | 525 |
| Phe | Ser | Ala | Ile | Pro | His | Val | Lys | Tyr | Leu | Asp | Leu | Thr | Asn | Asn | 530 | 535 | 540 |
| Arg | Leu | Asp | Phe | Asp | Asn | Ala | Ser | Ala | Leu | Thr | Glu | Leu | Ser | Asp | 545 | 550 | 555 |
| Leu | Glu | Val | Leu | Asp | Leu | Ser | Tyr | Asn | Ser | His | Tyr | Phe | Arg | Ile | 560 | 565 | 570 |
| Ala | Gly | Val | Thr | His | His | Leu | Glu | Phe | Ile | Gln | Asn | Phe | Thr | Asn | 575 | 580 | 585 |
| Leu | Lys | Val | Leu | Asn | Leu | Ser | His | Asn | Asn | Ile | Tyr | Thr | Leu | Thr | 590 | 595 | 600 |
| Asp | Lys | Tyr | Asn | Leu | Glu | Ser | Lys | Ser | Leu | Val | Glu | Leu | Val | Phe | 605 | 610 | 615 |
| Ser | Gly | Asn | Arg | Leu | Asp | Ile | Leu | Trp | Asn | Asp | Asp | Asp | Asn | Arg | 620 | 625 | 630 |
| Tyr | Ile | Ser | Ile | Phe | Lys | Gly | Leu | Lys | Asn | Leu | Thr | Arg | Leu | Asp |     |     |     |

| 635 |     |     |     |     |     |     |     |     |     | 640 |     |     |     |     | 645 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Ser | Leu | Asn | Arg | Leu | Lys | His | Ile | Pro | Asn | Glu | Ala | Phe | Leu |     |  |  |  |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |     |  |  |  |  |
| Asn | Leu | Pro | Ala | Ser | Leu | Thr | Glu | Leu | His | Ile | Asn | Asp | Asn | Met |     |  |  |  |  |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |     |  |  |  |  |
| Leu | Lys | Phe | Phe | Asn | Trp | Thr | Leu | Leu | Gln | Gln | Phe | Pro | Arg | Leu |     |  |  |  |  |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |     |  |  |  |  |
| Glu | Leu | Leu | Asp | Leu | Arg | Gly | Asn | Lys | Leu | Leu | Phe | Leu | Thr | Asp |     |  |  |  |  |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |     |  |  |  |  |
| Ser | Leu | Ser | Asp | Phe | Thr | Ser | Ser | Leu | Arg | Thr | Leu | Leu | Leu | Ser |     |  |  |  |  |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |     |  |  |  |  |
| His | Asn | Arg | Ile | Ser | His | Leu | Pro | Ser | Gly | Phe | Leu | Ser | Glu | Val |     |  |  |  |  |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |  |  |
| Ser | Ser | Leu | Lys | His | Leu | Asp | Leu | Ser | Ser | Asn | Leu | Leu | Lys | Thr |     |  |  |  |  |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |  |  |  |  |
| Ile | Asn | Lys | Ser | Ala | Leu | Glu | Thr | Lys | Thr | Thr | Thr | Lys | Leu | Ser |     |  |  |  |  |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |  |  |  |  |
| Met | Leu | Glu | Leu | His | Gly | Asn | Pro | Phe | Glu | Cys | Thr | Cys | Asp | Ile |     |  |  |  |  |
|     |     |     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |  |  |  |  |
| Gly | Asp | Phe | Arg | Arg | Trp | Met | Asp | Glu | His | Leu | Asn | Val | Lys | Ile |     |  |  |  |  |
|     |     |     |     | 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |  |  |  |  |
| Pro | Arg | Leu | Val | Asp | Val | Ile | Cys | Ala | Ser | Pro | Gly | Asp | Gln | Arg |     |  |  |  |  |
|     |     |     |     | 800 |     |     |     |     | 805 |     |     |     |     | 810 |     |  |  |  |  |
| Gly | Lys | Ser | Ile | Val | Ser | Leu | Glu | Leu | Thr | Thr | Cys | Val | Ser | Asp |     |  |  |  |  |
|     |     |     |     | 815 |     |     |     |     | 820 |     |     |     |     | 825 |     |  |  |  |  |
| Val | Thr | Ala | Val | Ile | Leu | Phe | Phe | Phe | Thr | Phe | Phe | Ile | Thr | Thr |     |  |  |  |  |
|     |     |     |     | 830 |     |     |     |     | 835 |     |     |     |     | 840 |     |  |  |  |  |
| Met | Val | Met | Leu | Ala | Ala | Leu | Ala | His | His | Leu | Phe | Tyr | Trp | Asp |     |  |  |  |  |
|     |     |     |     | 845 |     |     |     |     | 850 |     |     |     |     | 855 |     |  |  |  |  |
| Val | Trp | Phe | Ile | Tyr | Asn | Val | Cys | Leu | Ala | Lys | Val | Lys | Gly | Tyr |     |  |  |  |  |
|     |     |     |     | 860 |     |     |     |     | 865 |     |     |     |     | 870 |     |  |  |  |  |
| Arg | Ser | Leu | Ser | Thr | Ser | Gln | Thr | Phe | Tyr | Asp | Ala | Tyr | Ile | Ser |     |  |  |  |  |
|     |     |     |     | 875 |     |     |     |     | 880 |     |     |     |     | 885 |     |  |  |  |  |
| Tyr | Asp | Thr | Lys | Asp | Ala | Ser | Val | Thr | Asp | Trp | Val | Ile | Asn | Glu |     |  |  |  |  |
|     |     |     |     | 890 |     |     |     |     | 895 |     |     |     |     | 900 |     |  |  |  |  |
| Leu | Arg | Tyr | His | Leu | Glu | Glu | Ser | Arg | Asp | Lys | Asn | Val | Leu | Leu |     |  |  |  |  |
|     |     |     |     | 905 |     |     |     |     | 910 |     |     |     |     | 915 |     |  |  |  |  |
| Cys | Leu | Glu | Glu | Arg | Asp | Trp | Asp | Pro | Gly | Leu | Ala | Ile | Ile | Asp |     |  |  |  |  |
|     |     |     |     | 920 |     |     |     |     | 925 |     |     |     |     | 930 |     |  |  |  |  |

|     |     |     |     |      |     |     |     |     |      |     |     |     |     |      |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|
| Asn | Leu | Met | Gln | Ser  | Ile | Asn | Gln | Ser | Lys  | Lys | Thr | Val | Phe | Val  |
|     |     |     |     | 935  |     |     |     |     | 940  |     |     |     |     | 945  |
| Leu | Thr | Lys | Lys | Tyr  | Ala | Lys | Ser | Trp | Asn  | Phe | Lys | Thr | Ala | Phe  |
|     |     |     |     | 950  |     |     |     |     | 955  |     |     |     |     | 960  |
| Tyr | Leu | Ala | Leu | Gln  | Arg | Leu | Met | Asp | Glu  | Asn | Met | Asp | Val | Ile  |
|     |     |     |     | 965  |     |     |     |     | 970  |     |     |     |     | 975  |
| Ile | Phe | Ile | Leu | Leu  | Glu | Pro | Val | Leu | Gln  | His | Ser | Gln | Tyr | Leu  |
|     |     |     |     | 980  |     |     |     |     | 985  |     |     |     |     | 990  |
| Arg | Leu | Arg | Gln | Arg  | Ile | Cys | Lys | Ser | Ser  | Ile | Leu | Gln | Trp | Pro  |
|     |     |     |     | 995  |     |     |     |     | 1000 |     |     |     |     | 1005 |
| Asp | Asn | Pro | Lys | Ala  | Glu | Gly | Leu | Phe | Trp  | Gln | Thr | Leu | Arg | Asn  |
|     |     |     |     | 1010 |     |     |     |     | 1015 |     |     |     |     | 1020 |
| Val | Val | Leu | Thr | Glu  | Asn | Asp | Ser | Arg | Tyr  | Asn | Asn | Met | Tyr | Val  |
|     |     |     |     | 1025 |     |     |     |     | 1030 |     |     |     |     | 1035 |
| Asp | Ser | Ile | Lys | Gln  | Tyr |     |     |     |      |     |     |     |     |      |
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ctccctgagc gagcagattt ccttcctgga ggagcagctg gggctcctgct 1200  
cctgcaagaa agactcgtga ctgccagcg cccaggctg gactgagccc 1250  
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agaagccacc tcggggtgac tgagcgggaag gccaggcagg gccttcctcc 1350  
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ggctgggatc ttctctgtga atccaccct ggctaccccc accctggcta 1450  
ccccaacggc atcccaaggc cagggtgggc ctcagctgag ggaaggtagc 1500  
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gctgggtggg gcctcagtgg gggtgctgc ctgaccccca gcacaataaa 1600  
aatgaaacgt gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650  
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gccaacttg ttattgcag cttataatgg ttacaaat 1738

<210> 506  
<211> 273  
<212> PRT  
<213> Homo sapiens

<400> 506  
Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu  
1 5 10 15

09978299 101501  
TOSTOT 66282660

|                     |                     |                     |     |     |     |
|---------------------|---------------------|---------------------|-----|-----|-----|
| Ala Val Gly Gly Thr | Glu His Ala Tyr Arg | Pro Gly Arg Arg Val | 20  | 25  | 30  |
| Cys Ala Val Arg Ala | His Gly Asp Pro Val | Ser Glu Ser Phe Val | 35  | 40  | 45  |
| Gln Arg Val Tyr Gln | Pro Phe Leu Thr Thr | Cys Asp Gly His Arg | 50  | 55  | 60  |
| Ala Cys Ser Thr Tyr | Arg Thr Ile Tyr Arg | Thr Ala Tyr Arg Arg | 65  | 70  | 75  |
| Ser Pro Gly Leu Ala | Pro Ala Arg Pro Arg | Tyr Ala Cys Cys Pro | 80  | 85  | 90  |
| Gly Trp Lys Arg Thr | Ser Gly Leu Pro Gly | Ala Cys Gly Ala Ala | 95  | 100 | 105 |
| Ile Cys Gln Pro Pro | Cys Arg Asn Gly Gly | Ser Cys Val Gln Pro | 110 | 115 | 120 |
| Gly Arg Cys Arg Cys | Pro Ala Gly Trp Arg | Gly Asp Thr Cys Gln | 125 | 130 | 135 |
| Ser Asp Val Asp Glu | Cys Ser Ala Arg Arg | Gly Gly Cys Pro Gln | 140 | 145 | 150 |
| Arg Cys Ile Asn Thr | Ala Gly Ser Tyr Trp | Cys Gln Cys Trp Glu | 155 | 160 | 165 |
| Gly His Ser Leu Ser | Ala Asp Gly Thr Leu | Cys Val Pro Lys Gly | 170 | 175 | 180 |
| Gly Pro Pro Arg Val | Ala Pro Asn Pro Thr | Gly Val Asp Ser Ala | 185 | 190 | 195 |
| Met Lys Glu Glu Val | Gln Arg Leu Gln Ser | Arg Val Asp Leu Leu | 200 | 205 | 210 |
| Glu Glu Lys Leu Gln | Leu Val Leu Ala Pro | Leu His Ser Leu Ala | 215 | 220 | 225 |
| Ser Gln Ala Leu Glu | His Gly Leu Pro Asp | Pro Gly Ser Leu Leu | 230 | 235 | 240 |
| Val His Ser Phe Gln | Gln Leu Gly Arg Ile | Asp Ser Leu Ser Glu | 245 | 250 | 255 |
| Gln Ile Ser Phe Leu | Glu Glu Gln Leu Gly | Ser Cys Ser Cys Lys | 260 | 265 | 270 |
| Lys Asp Ser         |                     |                     |     |     |     |

<210> 507  
 <211> 1700  
 <212> DNA  
 <213> Homo sapiens

<400> 507

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ggccccagca agggctaggg tccatctcca gtcccaggac acagcagcgg 100  
ccaccatggc cacgcctggg ctccagcagc atcagagcag cccctgtggt 150  
tggcagcaaa gttcagcttg gctgggcccg ctgtgagggg cttcgcgcta 200  
cgccctgcgg tgtcccaggg gctgaggtct cctcatcttc tccctagcag 250  
tggatgagca acccaacggg ggcccgggga ggggaactgg ccccagaggga 300  
gaggaacccc aaagccacat ctgtagccag gatgagcagt gtgaatccag 350  
gcagcccca ggaccgggga ggcacaggtg gccccacca cccggaggag 400  
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cctgcgacgg gcaccgggcc tgcagcacct accgaaccat ctataggacc 700  
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caatatgcca gccgccatgc cggaacggag ggagctgtgt ccagcctggc 850  
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ccgacagga gtggacagtg caatgaagga agaagtgcag aggctgcagt 1100  
ccagggtgga cctgctggag gagaagctgc agctggtgct ggccccactg 1150  
cacagcctgg cctcgcaggc actggagcat gggctcccgg accccggcag 1200  
cctcctggtg cactccttcc agcagctcgg ccgcatcgac tccctgagcg 1250  
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gactcgtgac tgcccagcgc tccaggctgg actgagcccc tcacgccgcc 1350  
ctgcagcccc catgcccctg cccaacatgc tgggggtcca gaagccacct 1400  
cggggtgact gagcgggaagg ccaggcaggg ccttctcct cttcctcctc 1450

cccttcctcg ggaggctccc cagaccctgg catgggatgg gctgggatct 1500  
 tctctgtgaa tccaccctg gctaccccca ccctggctac cccaacggca 1550  
 tccaaggcc aggtggacc tcagctgagg gaaggtacga gctccctgct 1600  
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 cctcagtggg ggctgctgcc tgacccccag cacaataaaa atgaaacgtg 1700

<210> 508  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

<400> 508

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu | 1   | 5   | 10  | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20  | 25  | 30  |    |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35  | 40  | 45  |    |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50  | 55  | 60  |    |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65  | 70  | 75  |    |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80  | 85  | 90  |    |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95  | 100 | 105 |    |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 |    |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 |    |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | 140 | 145 | 150 |    |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | 155 | 160 | 165 |    |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly | 170 | 175 | 180 |    |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala | 185 | 190 | 195 |    |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu | 200 | 205 | 210 |    |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |

Lys Asp Ser

<210> 509  
 <211> 1538  
 <212> DNA  
 <213> Homo sapiens

<400> 509  
 cccacgcgtc cgaagctggc cctgcacggc tgcaagggag gctcctgtgg 50  
 acaggccagg caggtgggcc tcaggaggtg cctccaggcg gccagtgggc 100  
 ctgaggcccc agcaagggct agggctccatc tccagtccca ggacacagca 150  
 gcggccacca tggccacgcc tgggctccag cagcatcagc agccccagg 200  
 accggggagg cacaggtggc ccccaccacc cggaggagca gctcctgccc 250  
 ctgtccgggg gatgactgat tctcctccgc caggccaccc agaggagaag 300  
 gccaccccg cttggaggcac aggccatgag gggctctcag gaggtgctgc 350  
 tgatgtggct tctggtgttg gcagtgggcg gcacagagca cgcctaccgg 400  
 cccggccgta ggggtgtgtc tgtccgggct cacggggacc ctgtctccga 450  
 gtcgttcgtg cagcgtgtgt accagccctt cctcaccacc tgcgacgggc 500  
 accgggcctg cagcacctac cgaaccatct ataggaccgc ctaccgccgc 550  
 agccctgggc tggcccctgc caggcctcgc tacgcgtgct gcccggctg 600  
 gaagaggacc agcgggcttc ctggggcctg tggagcagca atatgccagc 650  
 cgccatgccg gaacggaggg agctgtgtcc agcctggccg ctgccgctgc 700  
 cctgcaggat ggcgggggtga cacttgccag tcagatgtgg atgaatgcag 750  
 tgctaggagg ggcggctgtc cccagcgtg cgtcaacacc gccggcagtt 800  
 actggtgccg gtgttgggag gggcacagcc tgtctgcaga cggtaactc 850  
 tgtgtgccca agggaggggc cccaggggtg gcccacaacc cgacaggagt 900  
 ggacagtga atgaaggaag aagtgcagag gctgcagtcc aggggtggacc 950

tgctggagga gaagctgcag ctggtgctgg cccactgca cagcctggcc 1000  
 tcgcaggcac tggagcatgg gctcccgac cccggcagcc tcctggtgca 1050  
 ctcttccag cagctcggcc gcacgcactc cctgagcgag cagatttcct 1100  
 tcctggagga gcagctgggg tcctgctcct gcaagaaaga ctctgactg 1150  
 cccagcgccc caggctggac tgagccctc acgccgccct gcagcccca 1200  
 tgcccctgcc caacatgctg ggggtccaga agccacctcg gggtgactga 1250  
 gcggaaggcc aggcaggcc ttctcctct tctcctccc ctctcctggg 1300  
 aggtcccca gaccctggca tgggatgggc tgggatcttc tctgtgaatc 1350  
 caccctggc taccaccacc ctggctaccc caacggcatc ccaaggccag 1400  
 gtgggcccctc agctgagga aggtacgagc tccctgctgg agcctgggac 1450  
 ccatggcaca ggccaggcag cccggaggct ggggtggggcc tcagtggggg 1500  
 ctgctgcctg acccccagca caataaaaat gaaacgtg 1538

<210> 510  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

<400> 510  
 Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu  
 1 5 10 15  
 Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val  
 20 25 30  
 Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val  
 35 40 45  
 Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg  
 50 55 60  
 Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg  
 65 70 75  
 Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro  
 80 85 90  
 Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala  
 95 100 105  
 Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro  
 110 115 120  
 Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln  
 125 130 135  
 Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln

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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 140                                 | 145                     | 150 |
| Arg Cys Val Asn Thr Ala Gly Ser Tyr | Trp Cys Gln Cys Trp Glu |     |
| 155                                 | 160                     | 165 |
| Gly His Ser Leu Ser Ala Asp Gly Thr | Leu Cys Val Pro Lys Gly |     |
| 170                                 | 175                     | 180 |
| Gly Pro Pro Arg Val Ala Pro Asn Pro | Thr Gly Val Asp Ser Ala |     |
| 185                                 | 190                     | 195 |
| Met Lys Glu Glu Val Gln Arg Leu Gln | Ser Arg Val Asp Leu Leu |     |
| 200                                 | 205                     | 210 |
| Glu Glu Lys Leu Gln Leu Val Leu Ala | Pro Leu His Ser Leu Ala |     |
| 215                                 | 220                     | 225 |
| Ser Gln Ala Leu Glu His Gly Leu Pro | Asp Pro Gly Ser Leu Leu |     |
| 230                                 | 235                     | 240 |
| Val His Ser Phe Gln Gln Leu Gly Arg | Ile Asp Ser Leu Ser Glu |     |
| 245                                 | 250                     | 255 |
| Gln Ile Ser Phe Leu Glu Glu Gln Leu | Gly Ser Cys Ser Cys Lys |     |
| 260                                 | 265                     | 270 |
| Lys Asp Ser                         |                         |     |

<210> 511  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 511  
 tggagcagca atatgccagc c 21

<210> 512  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 512  
 ttttccactc ctgtcgggtt gg 22

<210> 513  
 <211> 46  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe



<400> 513  
ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46

<210> 514  
<211> 2690  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> 2039-2065  
<223> unknown base

<400> 514  
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ggagacagcc tcccggcccg ggaggagaaa gtcgctgcca cttttggctg 100  
ccgacgtgat tccctgggac ggtccgtttc ctgccgtcag ctgccggccg 150  
agttgggtct ccgtgtttca ggccggctcc cccttcctgg tctcccttct 200  
cccgtggggc cggtttatcg ggaggagatt gtcttcagg gctagcaatt 250  
ggacttttga tgatgtttga ccagcggca ggaatagcag gcaacgtgat 300  
ttcaaagctg ggctcagcct ctgtttcttc tctcgtgtaa tcgcaaaacc 350  
cattttggag caggaattcc aatcatgtct gtgatggtag tgagaaagaa 400  
ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450  
atggccgcgt catgatggcc cggcaaaagg gcattttcta cctgaccctt 500  
ttcctcatcc tggggacatg tacactcttc ttgcctttg agtgccgcta 550  
cctggctgtt cagctgtctc ctgccatccc tgtatttgct gccatgctct 600  
tccttttctc catggctaca ctgttgagga ccagcttcag tgaccctgga 650  
gtgattcctc gggcgctacc agatgaagca gctttcatag aaatggagat 700  
agaagctacc aatgggtcgg tgccccagg ccagcgacca ccgcctcgta 750  
tcaagaattt ccagataaac aaccagattg tgaaactgaa atactgttac 800  
acatgcaaga tcttcgggcc tccccgggcc tccattgca gcatctgtga 850  
caactgtgtg gagcgcttcg accatcactg ccctgggtg gggaattgtg 900  
ttggaaagag gaactaccgc tacttctacc tcttcacct ttctctctcc 950  
ctcctcacia tctatgtctt cgccttcaac atcgtctatg tggccctcaa 1000  
atctttgaaa attggcttct tggagacatt gaaagaaact cctggaactg 1050  
ttctagaagt cctcatttgc ttctttacac tctggtccgt cgtgggactg 1100

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atggcaatat tgtgaagaac tgctgtgaag tgctgtgtgg ccccttgccc 1250  
cccagtgtgc tggatcgaag gggatatttg cacttgagg aaagtggaag 1300  
tcgacctccc agtactcaag agaccagtag cagcctcttg ccacagagcc 1350  
cagccccac agaacacctg aactcaaag agatgccgga ggacagcagc 1400  
actcccgaag agatgccacc tccagagccc ccagagccac cacaggaggc 1450  
agctgaagct gagaagtagc ctatctatgg aagagacttt tgtttgtgtt 1500  
taattagggc tatgagagat ttcaggtgag aagttaaacc tgagacagag 1550  
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agctgctgca cgtgctgagt ccagaggcag tcacagagac ctctggccag 1900  
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tggggtcaga agattctcct ggccaccaag tgccagcatt gccacaaaat 2000  
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gctctcctct cctctcctct ccccgatgt accctcaaaa aaaaaaaat 2300  
gctaaccagt tcttcatta agcctcggct gaggtaggga aagcccagca 2350  
ctgctgccct ctgggtaac tcacctaaag gcctcggccc acctctggct 2400  
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caccggcaga gtcccagagc cacttcaccc tgggggtggg ctgtggcccc 2500  
cagtcagctc tgctcaggac ctgctctatt tcagggaaga agatttatgt 2550

attatatgtg gctatatttc ctagagcacc tgtgttttcc tctttctaag 2600  
ccagggctcct gtctggatga cttatgcggt gggggagtgt aaaccggaac 2650  
ttttcatcta ttggaaggcg attaaactgt gtctaatagca 2690

<210> 515  
<211> 364  
<212> PRT  
<213> Homo sapiens

<400> 515  
Met Ser Val Met Val Val Arg Lys Lys Val Thr Arg Lys Trp Glu  
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Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met  
20 25 30  
Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile  
35 40 45  
Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu  
50 55 60  
Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu  
65 70 75  
Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp  
80 85 90  
Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile  
95 100 105  
Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln  
110 115 120  
Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile  
125 130 135  
Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro  
140 145 150  
Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe  
155 160 165  
Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn  
170 175 180  
Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr  
185 190 195  
Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser  
200 205 210  
Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr  
215 220 225  
Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

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|                 |   |  |     |  |     |
|-----------------|---|--|-----|--|-----|
|                 | 230   |  | 235 |  | 240 |
| Gly Leu Thr Gly | Phe His Thr Phe Leu Val Ala Leu Asn Gln Thr |  |     |  |     |
|                 | 245   |  | 250 |  | 255 |
| Thr Asn Glu Asp | Ile Lys Gly Ser Trp Thr Gly Lys Asn Arg Val |  |     |  |     |
|                 | 260   |  | 265 |  | 270 |
| Gln Asn Pro Tyr | Ser His Gly Asn Ile Val Lys Asn Cys Cys Glu |  |     |  |     |
|                 | 275   |  | 280 |  | 285 |
| Val Leu Cys Gly | Pro Leu Pro Pro Ser Val Leu Asp Arg Arg Gly |  |     |  |     |
|                 | 290   |  | 295 |  | 300 |
| Ile Leu Pro Leu | Glu Glu Ser Gly Ser Arg Pro Pro Ser Thr Gln |  |     |  |     |
|                 | 305   |  | 310 |  | 315 |
| Glu Thr Ser Ser | Ser Leu Leu Pro Gln Ser Pro Ala Pro Thr Glu |  |     |  |     |
|                 | 320   |  | 325 |  | 330 |
| His Leu Asn Ser | Asn Glu Met Pro Glu Asp Ser Ser Thr Pro Glu |  |     |  |     |
|                 | 335   |  | 340 |  | 345 |
| Glu Met Pro Pro | Pro Glu Pro Pro Glu Pro Pro Gln Glu Ala Ala |  |     |  |     |
|                 | 350   |  | 355 |  | 360 |

Glu Ala Glu Lys

<210> 516  
 <211> 255  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> 36, 38, 88, 118, 135, 193, 213, 222  
 <223> unknown base

<400> 516  
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 tgaattaggt attataggga tgggtgggggtt gatttttntt cctggagggt 100  
 tttggctttg gactctcnct ttctcccaca gagcncttcg accatcactg 150  
 cccctgggtg ggggaattgtg ttggaaagag gaactaccgc tanttctacc 200  
 tcttcatcct ttntctctcc cncctcaca tctatgtcct cgccttcaac 250  
 atcgt 255

<210> 517  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 517

caacgtgatt tcaaagctgg gctc 24

<210> 518

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 518

gcctcgtatc aagaatttcc 20

<210> 519

<211> 18

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 65 70 75  
 Tyr Ala Gly Asn Asp Lys Trp Cys Leu Asp Pro Arg Val Val Leu  
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 Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr Asp  
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 185 190 195  
 Ser Gly Asp Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala Ala Pro  
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 Val Val Arg Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr Ile  
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| Tyr Lys Asp Asp Lys Arg Leu Ile Glu Gly Lys Lys Gly Val Lys |     |     |
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| Leu Gly His Thr Asn Ala Ser Ile Met Leu Phe Gly Pro Gly Ala |     |     |
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| Val Ser Glu Val Ser Asn Gly Thr Ser Arg Arg Ala Gly Cys Val |     |     |
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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Leu | Val | Leu | Ala | Gly | Ala | Ser | Leu | Leu | Leu | Ala | Ala | Leu | Leu |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Leu | Gly | Cys | Leu | Val | Ala | Leu | Gly | Val | Gln | Tyr | His | Arg | Asp | Pro |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Ser | His | Ser | Thr | Cys | Leu | Thr | Glu | Ala | Cys | Ile | Arg | Val | Ala | Gly |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Lys | Ile | Leu | Glu | Ser | Leu | Asp | Arg | Gly | Val | Ser | Pro | Cys | Glu | Asp |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Phe | Tyr | Gln | Phe | Ser | Cys | Gly | Gly | Trp | Ile | Arg | Arg | Asn | Pro | Leu |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Pro | Asp | Gly | Arg | Ser | Arg | Trp | Asn | Thr | Phe | Asn | Ser | Leu | Trp | Asp |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Gln | Asn | Gln | Ala | Ile | Leu | Lys | His | Leu | Leu | Glu | Asn | Thr | Thr | Phe |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Asn | Ser | Ser | Ser | Glu | Ala | Glu | Gln | Lys | Thr | Gln | Arg | Phe | Tyr | Leu |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ser | Cys | Leu | Gln | Val | Glu | Arg | Ile | Glu | Glu | Leu | Gly | Ala | Gln | Pro |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Leu | Arg | Asp | Leu | Ile | Glu | Lys | Ile | Gly | Gly | Trp | Asn | Ile | Thr | Gly |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Pro | Trp | Asp | Gln | Asp | Asn | Phe | Met | Glu | Val | Leu | Lys | Ala | Val | Ala |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Gly | Thr | Tyr | Arg | Ala | Thr | Pro | Phe | Phe | Thr | Val | Tyr | Ile | Ser | Ala |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Asp | Ser | Lys | Ser | Ser | Asn | Ser | Asn | Val | Ile | Gln | Val | Asp | Gln | Ser |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Gly | Leu | Phe | Leu | Pro | Ser | Arg | Asp | Tyr | Tyr | Leu | Asn | Arg | Thr | Ala |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Asn | Glu | Lys | Val | Leu | Thr | Ala | Tyr | Leu | Asp | Tyr | Met | Glu | Glu | Leu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Gly | Met | Leu | Leu | Gly | Gly | Arg | Pro | Thr | Ser | Thr | Arg | Glu | Gln | Met |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Gln | Gln | Val | Leu | Glu | Leu | Glu | Ile | Gln | Leu | Ala | Asn | Ile | Thr | Val |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Pro | Gln | Asp | Gln | Arg | Arg | Asp | Glu | Glu | Lys | Ile | Tyr | His | Lys | Met |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ser | Ile | Ser | Glu | Leu | Gln | Ala | Leu | Ala | Pro | Ser | Met | Asp | Trp | Leu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Glu | Phe | Leu | Ser | Phe | Leu | Leu | Ser | Pro | Leu | Glu | Leu | Ser | Asp | Ser |  |

|                 |     |                     |     |                         |     |
|-----------------|-----|---------------------|-----|-------------------------|-----|
| Glu Pro Val Val | 320 | Tyr Gly Met Asp     | 325 | Tyr Leu Gln Gln Val Ser | 330 |
| 335             |     | 340                 |     | 345                     |     |
| Glu Leu Ile Asn | 350 | Arg Thr Glu Pro Ser | 355 | Ile Leu Asn Asn Tyr Leu | 360 |
| 365             |     | 370                 |     | 375                     |     |
| Ile Trp Asn Leu | 380 | Gln Lys Thr Thr     | 385 | Ser Ser Leu Asp Arg Arg | 390 |
| 395             |     | 400                 |     | 405                     |     |
| Phe Glu Ser Ala | 410 | Glu Lys Leu Leu     | 415 | Glu Thr Leu Tyr Gly Thr | 420 |
| 425             |     | 430                 |     | 435                     |     |
| Lys Lys Ser Cys | 440 | Pro Arg Trp Gln     | 445 | Thr Cys Ile Ser Asn Thr | 450 |
| 455             |     | 460                 |     | 465                     |     |
| Asp Asp Ala Leu | 470 | Gly Phe Ala Leu Gly | 475 | Ser Leu Phe Val Lys Ala | 480 |
| 485             |     | 490                 |     | 495                     |     |
| Thr Phe Asp Arg | 500 | Gln Ser Lys Glu Ile | 505 | Ala Glu Gly Met Ile Ser | 510 |
| 515             |     | 520                 |     | 525                     |     |
| Glu Ile Arg Thr | 530 | Ala Phe Glu Glu Ala | 535 | Leu Gly Gln Leu Val Trp | 540 |
| 545             |     | 550                 |     | 555                     |     |
| Met Asp Glu Lys | 560 | Thr Arg Gln Ala Ala | 565 | Lys Glu Lys Ala Asp Ala | 570 |
| 575             |     | 580                 |     | 585                     |     |
| Ile Tyr Asp Met | 590 | Ile Gly Phe Pro Asp | 595 | Phe Ile Leu Glu Pro Lys | 600 |
| 605             |     | 610                 |     | 615                     |     |
| Glu Leu Asp Asp | 620 | Val Tyr Asp Gly Tyr | 625 | Glu Ile Ser Glu Asp Ser | 630 |
| 635             |     | 640                 |     | 645                     |     |
| Phe Phe Gln Asn | 650 | Met Leu Asn Leu Tyr | 655 | Asn Phe Ser Ala Lys Val | 660 |
| 665             |     | 670                 |     | 675                     |     |
| Met Ala Asp Gln | 680 | Leu Arg Lys Pro Pro | 685 | Ser Arg Asp Gln Trp Ser | 690 |
| 695             |     | 700                 |     | 705                     |     |
| Met Thr Pro Gln | 710 | Thr Val Asn Ala Tyr | 715 | Tyr Leu Pro Thr Lys Asn | 720 |
| 725             |     | 730                 |     | 735                     |     |
| Glu Ile Val Phe | 740 | Pro Ala Gly Ile Leu | 745 | Gln Ala Pro Phe Tyr Ala | 750 |
| 755             |     | 760                 |     | 765                     |     |
| Arg Asn His Pro | 770 | Lys Ala Leu Asn Phe | 775 | Gly Gly Ile Gly Val Val | 780 |
| 785             |     | 790                 |     | 795                     |     |
| Met Gly His Glu | 800 | Leu Thr His Ala Phe | 805 | Asp Asp Gln Gly Arg Glu | 810 |
| 815             |     | 820                 |     | 825                     |     |
| Tyr Asp Lys Glu | 830 | Gly Asn Leu Arg Pro | 835 | Trp Trp Gln Asn Glu Ser | 840 |
| 845             |     | 850                 |     | 855                     |     |
| Leu Ala Ala Phe | 860 | Arg Asn His Thr Ala | 865 | Cys Met Glu Glu Gln Tyr | 870 |
| 875             |     | 880                 |     | 885                     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gln | Tyr | Gln | Val | Asn | Gly | Glu | Arg | Leu | Asn | Gly | Arg | Gln | Thr |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |
| Leu | Gly | Glu | Asn | Ile | Thr | Asp | Asn | Gly | Gly | Leu | Lys | Ala | Ala | Tyr |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |
| Asn | Ala | Tyr | Lys | Ala | Trp | Leu | Arg | Lys | His | Gly | Glu | Glu | Gln | Gln |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Leu | Pro | Ala | Val | Gly | Leu | Thr | Asn | His | Gln | Leu | Phe | Phe | Val | Gly |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |
| Phe | Ala | Gln | Val | Trp | Cys | Ser | Val | Arg | Thr | Pro | Glu | Ser | Ser | His |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Glu | Gly | Leu | Val | Thr | Asp | Pro | His | Ser | Pro | Ala | Arg | Phe | Arg | Val |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Leu | Gly | Thr | Leu | Ser | Asn | Ser | Arg | Asp | Phe | Leu | Arg | His | Phe | Gly |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val |
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 <213> Homo sapiens

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 <223> unknown base

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<400> 596

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<212> DNA
<213> Artificial Sequence

<220>
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<400> 609
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<210> 610
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<223> Synthetic oligonucleotide probe

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<210> 611  
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<212> DNA  
<213> Homo Sapien

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aagcaaccga gaggagggga ggcaaaaaca ccgaaaaaca aaaagagaga 100  
aacaacaccc aacaactggg gtggggggaa gaaagaaaga aaagaaaccc 150  
accacccac caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaatc 200  
ctgtggcgcg ccgcctggtt cccgggaaga ctgccagca ccagggggtg 250  
ggggagtgcg agctgaaagc tgctggagag tgagcagccc tagcagggat 300  
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accaacgtga cacaggagca cttcggcaat tatacctgtg tggctgcca 1200  
caagctaggc acaaccaatg cgagcctgcc tcttaaccct ccaagtacag 1250

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 tacacaagga ataatttctg atccaggatc gtccttccaa atggctgtat 2650  
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<210> 612  
 <211> 352  
 <212> PRT  
 <213> Homo Sapien

<400> 612

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Met | Leu | Leu | Val | Gln | Gly | Ala | Cys | Cys | Ser | Asn | Gln | Trp | Leu | 1   | 5   | 10  | 15 |
| Ala | Ala | Val | Leu | Leu | Ser | Leu | Cys | Cys | Leu | Leu | Pro | Ser | Cys | Leu | 20  | 25  | 30  |    |
| Pro | Ala | Gly | Gln | Ser | Val | Asp | Phe | Pro | Trp | Ala | Ala | Val | Asp | Asn | 35  | 40  | 45  |    |
| Met | Met | Val | Arg | Lys | Gly | Asp | Thr | Ala | Val | Leu | Arg | Cys | Tyr | Leu | 50  | 55  | 60  |    |
| Glu | Asp | Gly | Ala | Ser | Lys | Gly | Ala | Trp | Leu | Asn | Arg | Ser | Ser | Ile | 65  | 70  | 75  |    |
| Ile | Phe | Ala | Gly | Gly | Asp | Lys | Trp | Ser | Val | Asp | Pro | Arg | Val | Ser | 80  | 85  | 90  |    |
| Ile | Ser | Thr | Leu | Asn | Lys | Arg | Asp | Tyr | Ser | Leu | Gln | Ile | Gln | Asn | 95  | 100 | 105 |    |
| Val | Asp | Val | Thr | Asp | Asp | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr | 110 | 115 | 120 |    |
| Gln | His | Thr | Pro | Arg | Thr | Met | Gln | Val | His | Leu | Thr | Val | Gln | Val | 125 | 130 | 135 |    |
| Pro | Pro | Lys | Ile | Tyr | Asp | Ile | Ser | Asn | Asp | Met | Thr | Val | Asn | Glu | 140 | 145 | 150 |    |
| Gly | Thr | Asn | Val | Thr | Leu | Thr | Cys | Leu | Ala | Thr | Gly | Lys | Pro | Glu | 155 | 160 | 165 |    |
| Pro | Ser | Ile | Ser | Trp | Arg | His | Ile | Ser | Pro | Ser | Ala | Lys | Pro | Phe | 170 | 175 | 180 |    |
| Glu | Asn | Gly | Gln | Tyr | Leu | Asp | Ile | Tyr | Gly | Ile | Thr | Arg | Asp | Gln | 185 | 190 | 195 |    |
| Ala | Gly | Glu | Tyr | Glu | Cys | Ser | Ala | Glu | Asn | Ala | Val | Ser | Phe | Pro | 200 | 205 | 210 |    |
| Asp | Val | Arg | Lys | Val | Lys | Val | Val | Val | Asn | Phe | Ala | Pro | Thr | Ile | 215 | 220 | 225 |    |
| Gln | Glu | Ile | Lys | Ser | Gly | Thr | Val | Thr | Pro | Gly | Arg | Ser | Gly | Leu |     |     |     |    |

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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 230                                 | 235                     | 240 |
| Ile Arg Cys Glu Gly Ala Gly Val Pro | Pro Pro Ala Phe Glu Trp |     |
| 245                                 | 250                     | 255 |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn | Gly Gln Gln Gly Ile Ile |     |
| 260                                 | 265                     | 270 |
| Ile Gln Asn Phe Ser Thr Arg Ser Ile | Leu Thr Val Thr Asn Val |     |
| 275                                 | 280                     | 285 |
| Thr Gln Glu His Phe Gly Asn Tyr Thr | Cys Val Ala Ala Asn Lys |     |
| 290                                 | 295                     | 300 |
| Leu Gly Thr Thr Asn Ala Ser Leu Pro | Leu Asn Pro Pro Ser Thr |     |
| 305                                 | 310                     | 315 |
| Ala Gln Tyr Gly Ile Thr Gly Ser Ala | Asp Val Leu Phe Ser Cys |     |
| 320                                 | 325                     | 330 |
| Trp Tyr Leu Val Leu Thr Leu Ser Ser | Phe Thr Ser Ile Phe Tyr |     |
| 335                                 | 340                     | 345 |
| Leu Lys Asn Ala Ile Leu Gln         |                         |     |
| 350                                 |                         |     |

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 <211> 1797  
 <212> DNA  
 <213> Homo Sapien

<400> 613  
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 aaataagaaa attctcaagg aggacgagct cttgagttag acccaacaag 150  
 ctgcttttca ccaaattgca atggagcctt tcgaaatcaa tgttccaaag 200  
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 atctgcaggc gcggtccgg gtctctggaga tgtatttcct caatgacact 350  
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 aactcacctg ggtccgcgtc agccatgagc acttgctgca gcgggtagac 500  
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 cccaggtcctt caaggtcaca agggggccat gggcatgcct ggtgccctg 600  
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<210> 614  
<211> 520  
<212> PRT  
<213> Homo Sapien

<400> 614  
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Thr Gln Gln Ala Ala Phe His Gln Ile Ala Met Glu Pro Phe Glu  
20 25 30

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | 35  | 40  | 45  |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | 50  | 55  | 60  |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | 65  | 70  | 75  |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | 80  | 85  | 90  |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | 95  | 100 | 105 |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | 110 | 115 | 120 |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | 125 | 130 | 135 |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | 140 | 145 | 150 |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | 155 | 160 | 165 |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | 170 | 175 | 180 |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln | 185 | 190 | 195 |
| Gly | Pro | Pro | Gly | Val | Lys | Gly | Glu | Ala | Gly | Leu | Gln | Gly | Pro | Gln | 200 | 205 | 210 |
| Gly | Ala | Pro | Gly | Lys | Gln | Gly | Ala | Thr | Gly | Thr | Pro | Gly | Pro | Gln | 215 | 220 | 225 |
| Gly | Glu | Lys | Gly | Ser | Lys | Gly | Asp | Gly | Gly | Leu | Ile | Gly | Pro | Lys | 230 | 235 | 240 |
| Gly | Glu | Thr | Gly | Thr | Lys | Gly | Glu | Lys | Gly | Asp | Leu | Gly | Leu | Pro | 245 | 250 | 255 |
| Gly | Ser | Lys | Gly | Asp | Arg | Gly | Met | Lys | Gly | Asp | Ala | Gly | Val | Met | 260 | 265 | 270 |
| Gly | Pro | Pro | Gly | Ala | Gln | Gly | Ser | Lys | Gly | Asp | Phe | Gly | Arg | Pro | 275 | 280 | 285 |
| Gly | Pro | Pro | Gly | Leu | Ala | Gly | Phe | Pro | Gly | Ala | Lys | Gly | Asp | Gln | 290 | 295 | 300 |
| Gly | Gln | Pro | Gly | Leu | Gln | Gly | Val | Pro | Gly | Pro | Pro | Gly | Ala | Val | 305 | 310 | 315 |
| Gly | His | Pro | Gly | Ala | Lys | Gly | Glu | Pro | Gly | Ser | Ala | Gly | Ser | Pro |     |     |     |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 320                                 | 325                     | 330 |
| Gly Arg Ala Gly Leu Pro Gly Ser Pro | Gly Ser Pro Gly Ala Thr |     |
| 335                                 | 340                     | 345 |
| Gly Leu Lys Gly Ser Lys Gly Asp Thr | Gly Leu Gln Gly Gln Gln |     |
| 350                                 | 355                     | 360 |
| Gly Arg Lys Gly Glu Ser Gly Val Pro | Gly Pro Ala Gly Val Lys |     |
| 365                                 | 370                     | 375 |
| Gly Glu Gln Gly Ser Pro Gly Leu Ala | Gly Pro Lys Gly Ala Pro |     |
| 380                                 | 385                     | 390 |
| Gly Gln Ala Gly Gln Lys Gly Asp Gln | Gly Val Lys Gly Ser Ser |     |
| 395                                 | 400                     | 405 |
| Gly Glu Gln Gly Val Lys Gly Glu Lys | Gly Glu Arg Gly Glu Asn |     |
| 410                                 | 415                     | 420 |
| Ser Val Ser Val Arg Ile Val Gly Ser | Ser Asn Arg Gly Arg Ala |     |
| 425                                 | 430                     | 435 |
| Glu Val Tyr Tyr Ser Gly Thr Trp Gly | Thr Ile Cys Asp Asp Glu |     |
| 440                                 | 445                     | 450 |
| Trp Gln Asn Ser Asp Ala Ile Val Phe | Cys Arg Met Leu Gly Tyr |     |
| 455                                 | 460                     | 465 |
| Ser Lys Gly Arg Ala Leu Tyr Lys Val | Gly Ala Gly Thr Gly Gln |     |
| 470                                 | 475                     | 480 |
| Ile Trp Leu Asp Asn Val Gln Cys Arg | Gly Thr Glu Ser Thr Leu |     |
| 485                                 | 490                     | 495 |
| Trp Ser Cys Thr Lys Asn Ser Trp Gly | His His Asp Cys Ser His |     |
| 500                                 | 505                     | 510 |
| Glu Glu Asp Ala Gly Val Glu Cys Ser | Val                     |     |
| 515                                 | 520                     |     |

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 <211> 647  
 <212> DNA  
 <213> Homo Sapien

<400> 615  
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 atttaagaag catcctctgc caagacccaaa aggaaagaag aaaaagggcc 150  
 aaaagccaaa atgaaactga tgggtacttgt tttcaccatt gggctaactt 200  
 tgctgctagg agttcaagcc atgcctgcaa atgcctctc ttgctacaga 250  
 aagatactaa aagatcacia ctgtcacaac cttccggaag gagtagctga 300



cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350  
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 aaagacgttt tctttggacc aaagatctct ttogtgattc cttgcaacaa 450  
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttccac 500  
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550  
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 gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaaa 647

<210> 616  
 <211> 98  
 <212> PRT  
 <213> Homo Sapien

<400> 616  
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 20 25 30  
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val  
 35 40 45  
 Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp  
 50 55 60  
 Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu  
 65 70 75  
 Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser  
 80 85 90  
 Phe Val Ile Pro Cys Asn Asn Gln  
 95

<210> 617  
 <211> 2558  
 <212> DNA  
 <213> Homo Sapien

<400> 617  
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 accccgccgt ggtggttga gggcgcgcag tagagcagca gcacaggcgc 150  
 gggccccggg aggccggctc tgctcgcgcc gagatgtgga atctccttca 200  
 cgaaaccgac tcggctgtgg ccaccgcgcg ccgccgcgc tggtgtgcg 250  
 ctggggcgct ggtgctggcg ggtggcttct ttctcctcgg cttcctcttc 300

gggtggttta taaaatcctc caatgaagct actaacatta ctccaaagca 350  
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 tcttacataa ttttacacag ataccacatt tagcaggaac agaacaaaac 450  
 tttcagcttg caaagcaaat tcaatcccag tggaaagaat ttggcctgga 500  
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 aacacatcat tatttgaacc acctcctcca ggatatgaaa atgtttcgga 650  
 tattgtacca cctttcagtg ctttctctcc tcaaggaatg ccagagggcg 700  
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 cgggacatga aaatcaattg ctctgggaaa attgtaattg ccagatatgg 800  
 gaaagttttc agaggaaata aggttaaaaa tgcccagctg gcagggggcca 850  
 aaggagtcat tctctactcc gaccctgctg actactttgc tcctgggggtg 900  
 aagtcctatc cagacgggtg gaatcttcct ggaggtggtg tccagcgtgg 950  
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 cagcaaatga atatgcttat aggcgtggaa ttgcagaggc tgttggtctt 1050  
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 tcaaagtgcc ctacaatggt ggacctggct ttactggaaa cttttctaca 1200  
 caaaaagtca agatgcacat ccactctacc aatgaagtga cgagaattta 1250  
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<212> PRT  
<213> Homo Sapien

<400> 618

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Asn | Leu | Leu | His | Glu | Thr | Asp | Ser | Ala | Val | Ala | Thr | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Arg | Arg | Pro | Arg | Trp | Leu | Cys | Ala | Gly | Ala | Leu | Val | Leu | Ala | Gly |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Gly | Phe | Phe | Leu | Leu | Gly | Phe | Leu | Phe | Gly | Trp | Phe | Ile | Lys | Ser |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ser | Asn | Glu | Ala | Thr | Asn | Ile | Thr | Pro | Lys | His | Asn | Met | Lys | Ala |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Phe | Leu | Asp | Glu | Leu | Lys | Ala | Glu | Asn | Ile | Lys | Lys | Phe | Leu | His |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Asn | Phe | Thr | Gln | Ile | Pro | His | Leu | Ala | Gly | Thr | Glu | Gln | Asn | Phe |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Ala | Lys | Gln | Ile | Gln | Ser | Gln | Trp | Lys | Glu | Phe | Gly | Leu | 95  | 100 | 105 |
| Asp | Ser | Val | Glu | Leu | Ala | His | Tyr | Asp | Val | Leu | Leu | Ser | Tyr | Pro | 110 | 115 | 120 |
| Asn | Lys | Thr | His | Pro | Asn | Tyr | Ile | Ser | Ile | Ile | Asn | Glu | Asp | Gly | 125 | 130 | 135 |
| Asn | Glu | Ile | Phe | Asn | Thr | Ser | Leu | Phe | Glu | Pro | Pro | Pro | Pro | Gly | 140 | 145 | 150 |
| Tyr | Glu | Asn | Val | Ser | Asp | Ile | Val | Pro | Pro | Phe | Ser | Ala | Phe | Ser | 155 | 160 | 165 |
| Pro | Gln | Gly | Met | Pro | Glu | Gly | Asp | Leu | Val | Tyr | Val | Asn | Tyr | Ala | 170 | 175 | 180 |
| Arg | Thr | Glu | Asp | Phe | Phe | Lys | Leu | Glu | Arg | Asp | Met | Lys | Ile | Asn | 185 | 190 | 195 |
| Cys | Ser | Gly | Lys | Ile | Val | Ile | Ala | Arg | Tyr | Gly | Lys | Val | Phe | Arg | 200 | 205 | 210 |
| Gly | Asn | Lys | Val | Lys | Asn | Ala | Gln | Leu | Ala | Gly | Ala | Lys | Gly | Val | 215 | 220 | 225 |
| Ile | Leu | Tyr | Ser | Asp | Pro | Ala | Asp | Tyr | Phe | Ala | Pro | Gly | Val | Lys | 230 | 235 | 240 |
| Ser | Tyr | Pro | Asp | Gly | Trp | Asn | Leu | Pro | Gly | Gly | Gly | Val | Gln | Arg | 245 | 250 | 255 |
| Gly | Asn | Ile | Leu | Asn | Leu | Asn | Gly | Ala | Gly | Asp | Pro | Leu | Thr | Pro | 260 | 265 | 270 |
| Gly | Tyr | Pro | Ala | Asn | Glu | Tyr | Ala | Tyr | Arg | Arg | Gly | Ile | Ala | Glu | 275 | 280 | 285 |
| Ala | Val | Gly | Leu | Pro | Ser | Ile | Pro | Val | His | Pro | Ile | Gly | Tyr | Tyr | 290 | 295 | 300 |
| Asp | Ala | Gln | Lys | Leu | Leu | Glu | Lys | Met | Gly | Gly | Ser | Ala | Pro | Pro | 305 | 310 | 315 |
| Asp | Ser | Ser | Trp | Arg | Gly | Ser | Leu | Lys | Val | Pro | Tyr | Asn | Val | Gly | 320 | 325 | 330 |
| Pro | Gly | Phe | Thr | Gly | Asn | Phe | Ser | Thr | Gln | Lys | Val | Lys | Met | His | 335 | 340 | 345 |
| Ile | His | Ser | Thr | Asn | Glu | Val | Thr | Arg | Ile | Tyr | Asn | Val | Ile | Gly | 350 | 355 | 360 |
| Thr | Leu | Arg | Gly | Ala | Val | Glu | Pro | Asp | Arg | Tyr | Val | Ile | Leu | Gly | 365 | 370 | 375 |
| Gly | His | Arg | Asp | Ser | Trp | Val | Phe | Gly | Gly | Ile | Asp | Pro | Gln | Ser |     |     |     |

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|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| 380             | 385                 | 390                     |
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr Leu |
| 395             | 400                 | 405                     |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala Ser |
| 410             | 415                 | 420                     |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp Ala |
| 425             | 430                 | 435                     |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr Ile |
| 440             | 445                 | 450                     |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val Asp |
| 455             | 460                 | 465                     |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys Glu |
| 470             | 475                 | 480                     |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr Glu |
| 485             | 490                 | 495                     |
| Ser Trp Thr Lys | Lys Ser Pro Ser Pro | Glu Phe Ser Gly Met Pro |
| 500             | 505                 | 510                     |
| Arg Ile Ser Lys | Leu Gly Ser Gly Asn | Asp Phe Glu Val Phe Phe |
| 515             | 520                 | 525                     |
| Gln Arg Leu Gly | Ile Ala Ser Gly Arg | Ala Arg Tyr Thr Lys Asn |
| 530             | 535                 | 540                     |
| Trp Glu Thr Asn | Lys Phe Ser Gly Tyr | Pro Leu Tyr His Ser Val |
| 545             | 550                 | 555                     |
| Tyr Glu Thr Tyr | Glu Leu Val Glu Lys | Phe Tyr Asp Pro Met Phe |
| 560             | 565                 | 570                     |
| Lys Tyr His Leu | Thr Val Ala Gln Val | Arg Gly Gly Met Val Phe |
| 575             | 580                 | 585                     |
| Glu Leu Ala Asn | Ser Ile Val Leu Pro | Phe Asp Cys Arg Asp Tyr |
| 590             | 595                 | 600                     |
| Ala Val Val Leu | Arg Lys Tyr Ala Asp | Lys Ile Tyr Ser Ile Ser |
| 605             | 610                 | 615                     |
| Met Lys His Pro | Gln Glu Met Lys Thr | Tyr Ser Val Ser Phe Asp |
| 620             | 625                 | 630                     |
| Ser Leu Phe Ser | Ala Val Lys Asn Phe | Thr Glu Ile Ala Ser Lys |
| 635             | 640                 | 645                     |
| Phe Ser Glu Arg | Leu Gln Asp Phe Asp | Lys Ser Asn Pro Ile Val |
| 650             | 655                 | 660                     |
| Leu Arg Met Met | Asn Asp Gln Leu Met | Phe Leu Glu Arg Ala Phe |
| 665             | 670                 | 675                     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Pro | Leu | Gly | Leu | Pro | Asp | Arg | Pro | Phe | Tyr | Arg | His | Val |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Ile | Tyr | Ala | Pro | Ser | Ser | His | Asn | Lys | Tyr | Ala | Gly | Glu | Ser | Phe |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |
| Pro | Gly | Ile | Tyr | Asp | Ala | Leu | Phe | Asp | Ile | Glu | Ser | Lys | Val | Asp |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Pro | Ser | Lys | Ala | Trp | Gly | Glu | Val | Lys | Arg | Gln | Ile | Tyr | Val | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |
| Ala | Phe | Thr | Val | Gln | Ala | Ala | Ala | Glu | Thr | Leu | Ser | Glu | Val | Ala |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |

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